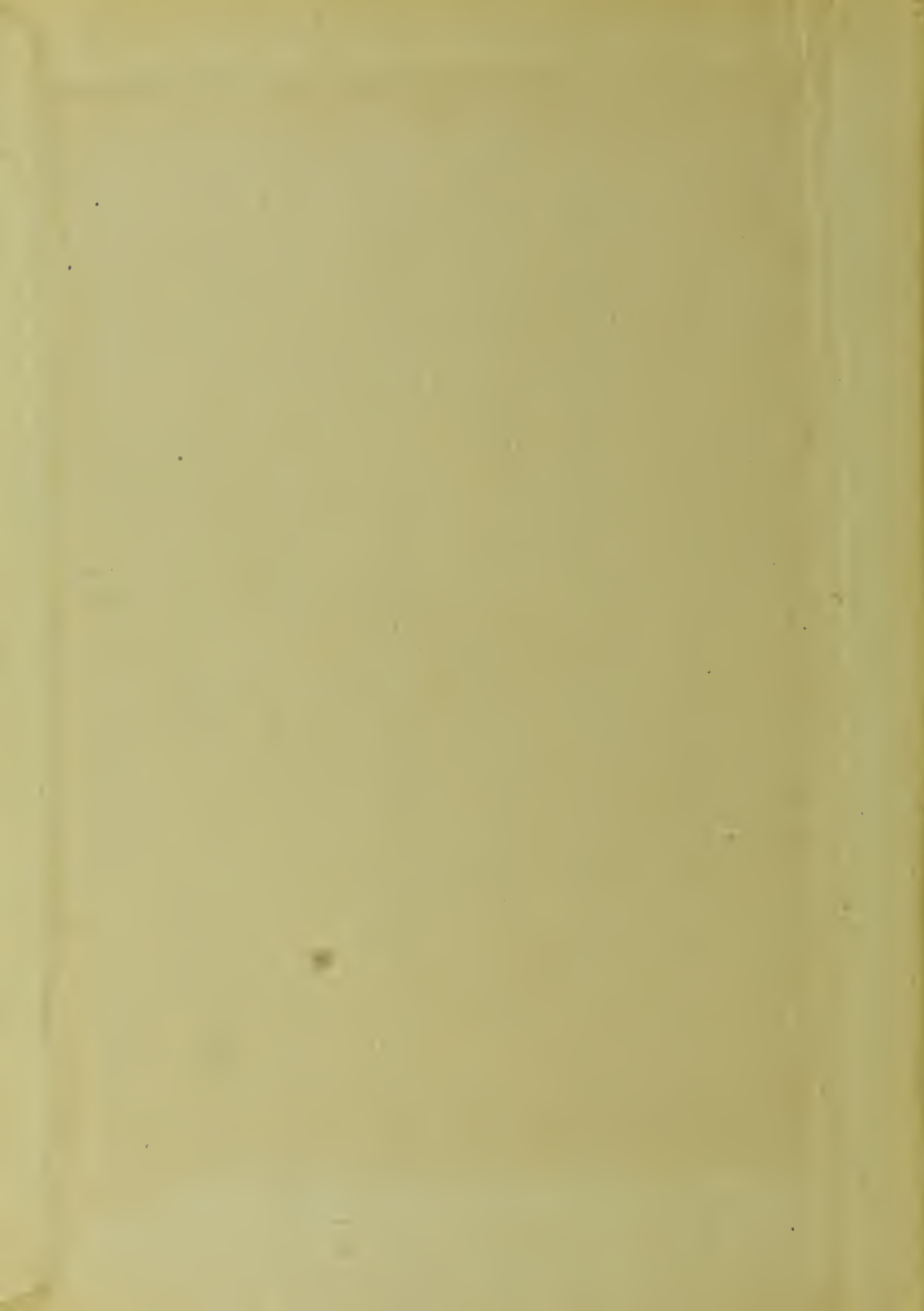


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THE INSECT PEST SURVEY BULLETIN

A periodical review of entomological conditions throughout the United States,
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OUTSTANDING ENTOMOLOGICAL FEATURES IN THE UNITED STATES

FOR THE PERIOD FROM NOVEMBER 1, 1923, TO APRIL 1, 1924.

Last winter witnessed some entomological developments that are extremely significant to the Survey. The symposium on methods of estimating insect abundance and damage which occupied the attention of the American Association of Economic Entomologists at their annual meeting at Cincinnati brought out many interesting features of survey work. The papers were remarkable for the broad philosophical way in which the subject was handled and clearly indicated the rapid advance that is being made in basing entomological practice upon established scientific principles instead of empiricism.

The appointing of a committee to standardize methods of estimating insect abundance by this Association and the response which this committee has received from the members of the Association is enlightening, and will undoubtedly lead in the immediate future to the accumulation of a much more useful mass of data on this subject.

The winter was marked by notably cool weather over the greater part of the United States during October, followed in the latter part of the month by a warm spell. Precipitation as a rule was normal to below normal except in the northeastern States and Great Plains, unusually wet weather occurring in western Kansas. East of the Mississippi River the cool weather continued through November, while over the central valley and the Great Plains the weather was decidedly warmer and in the Dakotas it was the mildest recorded in 30 years. The Southwest had cold rainy weather during November while the Pacific Coast was experiencing a drought. December was unusually warm, the weather in some places in the New England States being the warmest ever recorded, while the end of the month brought some very cold weather in the Northwest and from the Great Plains westward. January witnessed extreme frost damage in the South Atlantic States when a very severe cold wave spread over this region on the 5th and 6th of the month. The Gulf region experienced similar cold weather, and but for cloudy weather serious damage would have been done in Florida. On the 2d and 3d of January very severe cold weather was felt in California, and during the month the entire western region was dry and the East wet. February started out mildly, but rapidly turned cold as the month advanced, severe freezing weather occurring in the South Atlantic, Gulf, and Florida regions, while the temperature in the Rocky Mountains and on the Pacific Coast was about normal.

The European corn borer made very slight increase in the infested territory in the western part of its distribution. On the other hand, two new infestations extend southward to Long Island, making a very material advance toward the southeastern corn belt.

The Hessian fly has appeared in rather alarming numbers in ^{extreme} western Kansas following three years of excess precipitation. Heretofore this region has been beyond the Hessian fly territory.

The unusually cold weather occurring over the Southern States appears to have materially affected the hibernation of the boll weevil in the Delta Region, as is shown by the examinations made at the Delta Laboratory of the Bureau, where the average number of live weevils per ton of moss was the lowest ever recorded, being 0.5. A full account of the records since 1915 appears in the body of this bulletin.

This severe weather so completely destroyed the remnants of the sweet potato vines and potatoes in the field that this, combined with a scarcity of sweet potatoes held by the farmers, has very materially reduced the number of sweet potato weevils in the infested territory.

A high percentage of eggs of the Australian tomato weevil in the rearing cages of the Bureau's Gulfport, Miss., Laboratory was destroyed by the freezing weather of March. Apparently the number of larvae and adults in the field was considerably reduced.

The outbreak of the potato tuber moth on the Eastern shore of Virginia, which developed last fall, extends well up into Accomac County. This is the first record of the occurrence of this insect as a potato pest in the Eastern United States.

An outbreak of the pepper weevil was brought to light in October in the La Habra district of California. Up to that time this pest was known only from about Mesilla Park in New Mexico and in southern Texas. Later investigations showed the pest well established in practically all commercial pepper-growing sections in Orange County and in the San Fernando Valley in California, one grower reporting a loss of \$17,000 in last year's crop.

The discovery of the Oriental fruit moth in the vicinity of Valdosta, Ga., some 70 to 80 miles from the Fort Valley peach section is a matter of unusual interest. Active steps are being taken by the State Entomologist to eradicate the infestation if possible.

OUTSTANDING ENTOMOLOGICAL FEATURES FOR CANADA, NOVEMBER 1, 1923, TO APRIL 1, 1924

The winter of 1923-24 has been a very mild one throughout the greater part of the Dominion. The temperature, for the most part, has been well above normal with the exception of a cold snap in February throughout Eastern Canada.

The snowfall in the Western Provinces was light, the open range being also free from snow late in February so that no feeding of stock was necessary. The snowfall in Ontario, Quebec, and the Maritime Provinces generally speaking was much heavier, the ground being well covered with a blanket of snow throughout the winter so that except in certain cases there was little frost in the ground.

On the whole, the winter has been a very favorable one both for crops and their insect enemies.

The European corn borer caused measurable losses to corn in 1923 over a much wider area than in the previous season, in the heavily infested sections of southern Ontario. In the control area the infestation increased by 10 per cent over 1922, although with this increase it is still 22 per cent lower than in 1921; the actual field losses in this area in 1923 were negligible. The very late spring which retarded the development of the borers by at least two weeks largely neutralized the good effects of late planting, as the effect upon the development of the crop was not nearly so marked. The mortality of corn borer larvae passing through the winter of 1922-23 was very light, the average being only 6.4 per cent both above and below ground. Eight new townships were found infested during the season, bringing the total up to 170, covering an area of 13,266 square miles. An extensive control campaign is under way, the farmers being circularized and visited to encourage them in cleaning up corn refuse in every farm before June 1.

Grasshopper prevalence during the coming year will chiefly center in southern sections of Alberta and Saskatchewan, the species of most importance being Melanoplus atlantis Riley. The severe outbreak of Camula pellucida Scudd., which has been present in the Nicola Valley, British Columbia, for the past two years, is now on the decline; while in the Okanagan Valley, B. C., 1924 will constitute the peak year of infestation, with M. atlantis, M. packardii Scudd., and M. bivittatus Say as the most prevalent species.

The beet-root aphid, Periphigus oetiae Doane, was found during 1923 to be generally distributed throughout the entire Lower Fraser Valley of British Columbia. An evaluation of the economic status of this insect is under consideration for the coming season.

The wheat-stem sawfly, Cephus cinctus Nort., remains the major wheat pest in Manitoba, and is now present throughout the entire wheat-growing area of the Province over one-third of which it has caused considerable damage. The parasite Microbracon cephi Gahan is steadily on the increase.

Continued outbreaks of the rose chafer are expected to occur in many of the light sandy sections of southwestern Ontario during the coming season.

Owing to the favorable overwintering conditions many vineyards in the Niagara District of Ontario will probably be badly infested by grape leafhoppers, Erythroneura comae Say, and E. tricineta Fitch, during 1924.

The cutworm Euxoa excellens Grt. was very numerous in southern sections of Vancouver Island, B. C., during 1923, damage being done to a variety of field and garden crops. Large numbers of the larvae were destroyed by a wilt disease, and by parasites last autumn.

Outbreaks of the cankerworms are expected to occur in several of the counties around the western shores of Lake Ontario during the coming season.

Many trees in the orchards of southwestern Ontario are heavily infested with the San Jose scale, a general increase being observed.

Several districts in Nova Scotia which in the past were important breeding centers of the brown-tail moth have been found to be clear of infestation. Up to February 2, the number of nests collected was the smallest since the insect was first discovered in 1907, 75 per cent being taken in the locality of Bridgetown where great efforts are being made to eradicate the pest.

Eggs of the green apple aphid are at present abundant on the twigs of young trees in many apple orchards of southwestern Ontario.

The tussock caterpillar Halisidota tessellaris S. & A. appeared in immense numbers in southwestern Ontario during the late summer and fall of 1923, attacking various trees and shrubs, and doing considerable injury to apple orchards. This insect was abundant throughout eastern Canada, but it is not yet possible to forecast accurately the probable extent of its occurrence during the coming season.

CEREAL AND FORAGE - CROP INSECTS

MISCELLANEOUS FEEDERS

GRASSHOPPERS (Acridiidae)

Texas C. H. Gable (January 21): The grasshopper situation appears quite alarming to me. Mr. Russell, at my suggestion, has made rather an extensive examination of grasshopper eggs in northern Texas and finds that from 85 to 95 per cent are now in good hatchable condition. He gathered practically two 5-pound candy boxes full of egg masses in a very short time. He states that "in some places as many as a dozen masses were found within 5 or 6 inches."

WHEAT

HESSIAN FLY (Phytophaga destructor Say)

Michigan R. H. Pettit (March 10): We have quite a bit of Hessian fly infestation scattered in places where sowings were made before the fly-free date.

Illinois W. P. Flint: Abundant rains throughout the late summer and early fall of 1923 caused a heavy growth of the volunteer wheat in stubble fields throughout the State. This wheat is moderately to heavily infested with the Hessian fly and will provide sufficient spring adults for a moderately heavy infestation in the spring of 1924. In the sown fields there is very little infestation present except in the southwestern part of the State, where a number of fields were seeded early. The infestations in these fields will run from 60 to 90 per cent.

Nebraska M. H. Swenk (March 12): Organized campaigns to await the date of safe seeding of winter wheat, as announced by the Department of Entomology of the Nebraska Experiment Station, were conducted in 11 counties that showed a heavy infestation and experienced considerable losses during the spring of 1923. These organized counties were Cass, Otoe, Johnson, Richardson, Douglas, Saunders, Colfax, Seward, Fillmore, Buffalo, and Furnas. On the basis of the field observation station conducted at Plattsmouth, Cass County, in the fall of 1923, dates of safe seeding were announced for these counties, according to location, from September 29 to October 4. Subsequent checks in several of these counties showed that the wheat seeded on or after the announced date of safe seeding was free from infestation. In most of these counties a high percentage of the

farmers awaited the announced date of safe seeding, and as a result these counties that contained so much heavy infestation by the fly in the spring showed comparatively little of it in the fall. In other counties, unorganized, where the Hessian fly had not done enough injury in the spring of 1923 to indicate that organized effort to secure a general delay until the date of safe seeding, would be successful, the present infestation is more severe than it was a year ago. The organized campaign in Furnas County was not successful, for a comparatively small percentage of the farmers awaited the date of safe seeding, and as a result the infestation there is much increased at this time as compared to a year ago, except in the case of the small percentage of farmers who actually awaited the safe date before seeding their wheat. This area of heavy infestation in Furnas County extends even more heavily west into Redwillow County and east into Harlan County, thence less heavily, but still seriously, into Phelps and Gosper Counties and the southern part of Dawson County. Another center of serious infestation is in Jefferson County and the southern part of Gage County, and this extends northward into Saline and Fillmore Counties. Other counties from which reports of seriously injured fields have been received are Webster, Butler, Dodge, and Sarpy Counties. In brief, the geography of the Hessian fly infestation at this time is different from that of a year ago chiefly in that the counties that were worst infested a year ago are now comparatively lightly infested, while the present heavy infestation, except in Furnas County, is in counties that were not heavily enough infested a year ago to secure general interest in a program of late seeding.

CHINCH BUG (Blissus leucopterus Say)

- Ohio H. A. Gossard (March 22): There are very few chinch bugs to be found in the State and we are not expecting much trouble from them.
- Illinois W. P. Flint: No very extended examination of chinch bug hibernating quarters has been made up to this time. Those made thus far indicate about the average winter mortality in the central Illinois counties with a rather high mortality, in some cases as high as 50 per cent, in the northern counties. These counties are just becoming infested with the bugs. Present indications are that there are enough chinch bugs in hibernation to cause moderate to heavy damage to susceptible crops throughout the central and north-central counties of Illinois during the coming season. A more careful chinch bug survey will be conducted during the next two months.
- Missouri L. Haseman (March 12): In spite of severe winter on March 7 examination of clump and blue-grass harbors in sheltered places show live bugs abundant. They were observed in short and scattered grass shelters. Protection seemed poor, though, on south slope. This leads me to believe that we will have chinch bug trouble again this summer.

GREEN BUG (Trioxoptera graminum Rond.)

New Mexico

R. Middlebrock (March 11): As yet we have received no reports of the green bugs which usually at this time are reported from the eastern part of our State in large numbers.

PALE WESTERN CUTWORM (Poliosagrotis orthogonia Morr.)

New Mexico

J. R. Horton (March 8): The first outbreak of this cutworm in New Mexico occurred last year, discovered a month or so later than this season. Worms were reared through to the moth and identified. They feed entirely below the surface of the soil, cutting off the wheat stem or mining cut the central shoot for one-quarter to 1 inch of its length. The attack is most severe on late sown winter wheat, a single bite or two destroying the single shoot. When destroyed wheat is followed up with row crops, these are also attacked and destroyed. The damage was first seen this year about February 20.

CORN

EUROPEAN CORN BORER (Pyrausta nubilalis Huebn.)

Ohio

H. A. Gossard (March 22): The European corn borer has survived with no great amount of mortality in the cornstalks in the infested counties.

1 STALK BORER (Diatraea lineolata Walk.)

New Mexico

R. Middlebrock (March 11): The infestation was not very severe, being about 2 in 100 stalks in some fields, but running as high as 5 per cent in other fields. However, this valley is not the center of the worst infestation, which occurs along the eastern quarter of this State. There is some doubt as to whether this is lineolata or zeacolella.

ARMYWORM (Cirphis unipuncta Haw.)

Mississippi

H. W. Allen (March 12): Quite a number of Cirphis unipuncta have been found under board traps in crimson and burr clover.

CLOVER

CLOVER-LEAF WEEVIL (Hypera punctata Fab.)

Mississippi

H. W. Allen (March 12): We are finding many larvae of what I suppose to be Hypera punctata, under board traps in burr clover. The larvae are in several instars, but up to the present date no pupae or adults have been found.

SORGHUM

SORGHUM WEBBON' (Celama sorghniella Riley)

Missouri

L. Haseman (March 12): Overwintering caterpillars were recently found harboring in great numbers in the pith of broom corn stored for broom making. Some damage to the corn was reported, due to the tunneling of the larvae close up to the brush. This is a new record as to winter harbors of the pest.

F R U I T I N S E C T S

APPLE

GREEN APPLE APHID (Aphis pomi DeG.)

Oregon

A. L. Lovett (March 14): This is the first hatching date observed. There have been an unusually open winter and early spring. They appear above average from two limited observations.

ROSY APPLE APHID (Anuraphis roseus Baker)

Connecticut

W. E. Britton (March 24): A few eggs were found around fruit spurs of the apple at Milford, Middlefield, Middlebury, Cannondale, and South Glastonbury, which we take to be Anuraphis roseus Baker.

Oregon

A. L. Lovett (March 12): There have been an unusually open winter and early spring. The data have to do primarily with the hatching date. They may have started a day or two before observed. They appear above average with insufficient data.

WOOLLY APPLE APHID (Eriosoma lanigerum Hausm.)

Connecticut

Philip Garman (March 24): Galls of the woolly aphid on apple twigs were received from many parts of the State.

CODLING MOTH (Carpocapsa pomonella L.)

New Mexico

R. Middlebrook (March 11): Codling moths are in large numbers.

RASCAL LEAF-CRUMPLER (Mineola indisginella Zell.)

California

H. S. Smith (March 19): The rascal leaf-crumpler has been discovered for the first time in California by H. J. Ryan, County Horticultural Commissioner of Los Angeles County. It was thought at first that the pest was so limited in its distribution that eradication might be a possibility, but further inspection showed it to be so widespread in Los Angeles County that there was no hope of exterminating it.

TENT CATERPILLAR (Malacosoma americana Fab.)

Massachusetts A. I. Bourne (March 24): The apple tent caterpillar, which for the last two or three years has been on the increase, gradually approaching the top of its characteristic wave of abundance, is apparently, from all indications we can find at present, still on the increase. This is particularly true even in the western part of the State where its returning abundance was first noted, so that we can not apparently expect any great decrease in its numbers this season. Naturally we would expect the first signs of returning to a minimum abundance to be from that section of the State. Here in Amherst, early spring indications gathered from the egg masses are for a greater abundance of this species than last year. Mr. Fiske, of Lunenburg, in northern Worcester County, would estimate, from his personal observations, about 30 per cent more egg masses on his place than he found last year. The same is reported by Mr. Calkins, another prominent grower of the same general region. The egg masses are found in considerable numbers, even in well sprayed orchards, where of course they will not be allowed to increase to numbers enough to cause any serious injury once the season opens and the regular spray program is begun to be put in practice, but this increased abundance over last year in these well-cared-for orchards is a very good indication of the general upward trend of the pest.

Connecticut W. E. Britton (March 24): Egg clusters of Malacosoma americana Fab. were found on apple and wild cherry twigs everywhere throughout the State. They were more abundant than in an average year.

FALL WEBWORM (Hyphantria cunea Drury)

New York E. P. Felt and M. D. Leonard (December 6, 1923): Several infestations at Chazy and Chateaugay were evidenced by old nests which occurred on neglected apple trees.

SPRING CANKERWORM (Paleacrita vernata Peck)

Missouri L. Haseman (March 12): Male moths have been fairly abundant coming to lights since March 5 at Columbia. This probably indicates that we may expect some cankerworm trouble this spring.

FALL CANKERWORM (Alsophila pometaria Harr.)

Connecticut W. E. Britton (March 24): Males of Alsophila pometaria were exceedingly abundant around trees on warm days of November and December. They were more abundant than in an average year.

Leslie Rogers (November 14, 1923): At New Haven, great numbers of these insects were flying about a grove of oak trees on a hillside. The abundance was almost double that in an average year.

BUFFALO TREEHOPPER (Ceresa bubalus Fab.)

- New York P. J. Chapman (March 12): Injured apple twigs were received from Armonk.
- New Mexico R. Middlebrook (March 18): Damage by the buffalo treehopper is found in the eastern section of our State, but the damage is not severe, except in some very young nursery stock.

BROWN-TAIL MOTH (Euproctis chrysorrhoea L.)

- Massachusetts A. I. Bourne (March 24): From the main fruit growing sections within the area of the brown-tail moth infestation, I find that the condition in regard to this insect, judged from the overwintering tents, would appear to point to a very light infestation. Mr. Fiske of Lunenburg reports that in his orchard he has not been able to find any winter nests at all. Another grower, Mr. Farrar of South Lincoln, found 20 nests in 1,200 young bearing apple trees. The infestation is scattered, and there are apparently now and then points where it has still retained something of a foothold, but contrasted with this are many other sections where it is apparently practically extinct.

GIPSY MOTH (Porthetria dispar L.)

- Massachusetts A. I. Bourne (March 24): In regard to the gipsy moth in bearing orchards, at least the indications are for a very light infestation. In Essex County, in the northeastern section of the State, the report is that the egg masses are distinctly less numerous than last year. On the other hand, in western Middlesex County, the egg masses are very few compared with the last few years.

SAN JOSE SCALE (Aspidiotus perniciosus Comst.)

- Ohio H. A. Gossard (March 22): There is very little San Jose scale injury in the State. Mr. Houser has been scouting all over the State for the past two or three weeks trying to locate some orchards suitable for experimental use. He has located one near Painesville where the scales are plentiful and in excellent healthy condition. The mortality among them has not been high.
- Indiana J. J. Davis (March 24): The San Jose scale is the most important insect problem at the present time and there will be a large amount of oil emulsion used in the southern half of the State.

B. A. Porter (Winter 1923-1924): The following mortality records were taken in the same section of the same orchard at intervals during the winter. The trees were of the J. H. Hale variety of peach, and in fairly vigorous condition. In the spring of 1923 in the same orchard the mortality on the Elberta variety was 28 per cent. In making counts, only the partially grown scales were

counted. The very small scales and those which were about mature were disregarded, as in this locality all of these perish during the winter. The figures, therefore, represent the mortality among the scales which would have survived under favorable conditions.

<u>Date.</u>	<u>Number of scales.</u>			<u>Per cent dead.</u>
	<u>Live.</u>	<u>Dead.</u>	<u>Total.</u>	
Dec. 5	867	201	1068	17.9
Jan. 14	745	321	1066	30.1
Jan. 22	733	367	1100	33.4
Feb. 8	344	208	552	37.7
Feb. 19	545	475	1020	46.6
Mar. 12	498	502	1000	50.2

Illinois W. P. Flint: The winter temperature has been below normal during one or two periods throughout the entire State. Official records of from 4 to 23 degrees below zero have been reported at many points in the State. At Anna, in the southern part of the State, about 75 per cent of the hibernating stages of the scale were alive the latter part of November and the first of December. At the present time 40 to 45 per cent of the scale in this stage is alive, showing a winter mortality of about 30 per cent.

Missouri L. Haseman (March 12): The scale is very bad in several orchard sections but careful spraying is holding it very well. The winter mortality at Columbia was about 75 per cent in some counts as compared with 25 per cent last winter. This will surely be a factor in scale control this year. Overwintering scales during a recent warm spell showed slight signs of growth or activity.

New Mexico R. Middlebrook (March 11): The San Jose scale is about as prevalent as usual.

OYSTER-SHELL SCALE (Lepidosaphes ulmi L.)

Michigan R. H. Pettit (March 10): The oyster-shell bark-louse is probably worse than it has been in many years.

SHOT-HOLE BORER (Scolytus rugulosus Ratz.)

New York E. P. Felt and F. D. Leonard (December 6, 1923): A small apple tree was observed at Chazy, which had been killed by the attack of this insect.

EUROPEAN RED SPIDER (Paratetranychus pilosus C. & F.)

Massachusetts A. I. Bourne (March 24): The situation in regard to the European red mite is somewhat hard to define. From our observations, the pest has now reached well across the State. Its line of advance has been, however, roughly toward the northeast rather than

straight across the State so that we now find it pretty generally over Worcester, Middlesex, and Essex Counties. Few, if any, reports have been made of finding it in the southeastern area of the State. This advance has been widespread so that the infestation is very generally distributed throughout orchards, but in northern and northeastern Worcester County, as a general thing, the infestation is not particularly heavy as yet, except in some isolated cases, and of course it is confined chiefly to its principal host, the Baldwins. One grower who has pruned his orchard of 1,000 MacIntosh trees failed to notice any evidence of its presence, while Baldwins in blocks alongside showed quite heavy infestation. Here at the College, for two or three years in practically all of the blocks of apples, we have had the pest in considerable abundance, particularly on Baldwins. Last year, as I mentioned, the foliage by the middle of August was bronzed so that it became very conspicuous. However, examination during the winter season failed to disclose any amount of overwintering eggs. The same was true of practically our whole planting of apples. Our sole infestation of any consequence is apparently limited to our main block of plums which is a variety block containing a considerable number of trees. Here the infestation is light to fairly heavy, showing an apparent preference of the mites for certain varieties. According to reports from Connecticut, this should largely be attributed to predacious forms as the last year, here in Amherst at least, was particularly favorable to the development and multiplication of the mites. I may say that we were somewhat surprised to note this condition of things here at the College following such a marked infestation last year, although our observations throughout the State in the last few years have called our attention to somewhat similar, although less marked cases. That this is a purely local matter, confined principally to our own orchards, is borne out by the fact that some of the large growers to the south of us, just north of the Holyoke range, are finding the pest so abundant that they are contemplating special oil sprays for mite control. It would appear, from our experience here, that it is very difficult to make any general statement regarding infestation by this species, it being apparently a matter of individual orchards, to a very large extent.

Connecticut

Philip Garman (March 24): The European red mite is quite abundant in the northern part of the State. Eggs are more abundant than last year.

Virginia

W. J. Schoene (March 25): Eggs are very abundant on dormant apple twigs at Winchester.

GRAPE

SNOWY TREE-CRICKET (Oecanthus niveus DeG.)

Missouri

L. Haseman (March 18): Grape men at Boonville and Neosho are complaining of an unusual crop of eggs of this pest in their young grape canes used for cutting.

GRAPE LEAFHOPPER (Erythroneura comes Say)

New Mexico R. Middlebrook (March 11): Mr. Emory reports that many of the grape leafhoppers are present.

PHYMATODES MOENUS SAY

Massachusetts A. I. Bourne (March 24): There is one other brief item which has come to our attention here, and which may be of some slight interest. Early in February, during the course of pruning in the vineyard at the College, a section of cane from a weakened vine was brought down to the office as there had been found one or two specimens of apparently coleopterous larvae in the case. We succeeded in finding a larva and pupa, which were very evidently coleopterous and which we forwarded to Dr. A. G. Böving for identification. He identified this as the larval and pupal stages of Monophylla terminata Say, a clerid which is predacious on certain other forms, notably Phymatodes amoenus, and which is reported as very plentiful on dry wood attacked by Sinoxylon. Later we bred something like 20 adults of Phymatodes amoenus from this small section of cane which was scarcely 10 inches long. Still later, about the first of March, several specimens of a red-shouldered Sinoxylon, Sinoxylon basilare Say, emerged from this same section. This is interesting as giving a record of the breeding of two of Say's species from the same canes, and also of the finding of a predacious form of another of Say's species from the same source. Apparently from our study of literature on the subject both the Phymatodes and Sinoxylon are purely secondary in the nature of their injury, being attracted to weakened, dying canes in which they hasten the death and decay of the vine.

CITRUS

CITROPHILUS MEALYBUG (Pseudococcus gahani Green)

California H. S. Smith (March 19): The so-called citrophilus mealybug is spreading with extreme rapidity in the citrus orchards of southern California. This insect was first discovered in 1913 in an orchard at Uplands. For a number of years the pest was more or less confined to this area along with an infestation near Pasadena and another in the San Francisco Bay district. Less than two years ago, however, an outbreak was found in Orange County and since that time it has spread until now it covers an area of over 7,000 acres of orchards in parts of which it is doing severe damage to the citrus trees. Biological control work is, however, being carried on on a large scale and with great success. Much inconvenience is experienced by packinghouses and bi-product plant on account of the necessity of restricting the distribution of picking boxes and other orchard appliances in an attempt to prevent its further distribution.

TRUCK CROP INSECTS

MISCELLANEOUS PESTS

GARDEN SLUG (Agriolimax agrestis L.)

Oregon A. L. Lovett (1923-1924): This slug is always a serious pest of gardens and ornamentals, but destructiveness to field crops appears on the increase. Vetch is heavily attacked, as are tangier peas and clover. No real check on losses, but injury is general and in occasional fields very high, being practically present all winter and at the present time at Junction City, Corvallis, and western Oregon.

CABBAGE

CABBAGE WEBWORM (Hellula undalis Fab.)

Alabama F. L. Thomas (March 20): One adult observed on March 8.

STRAWBERRY

STRAWBERRY CROWN-BORER (Tylocodermus fragariae Riley)

Missouri L. Haseman (March 18): Inspectors report many fields held up due to last year's brood of borers in southwestern Missouri. No records taken on overwintering adults at this time.

STRAWBERRY ROOT WEEVIL (Euclyptus ovatus L.)

Washington J. E. Graf (March 1): Letter from R. D. Bodle Company, Seattle, Washington, dated February 21, advising in part that in their vicinity some four to five thousand acres of strawberries are produced, and nearly all of them are affected with the strawberry root-weevil. They have done everything to try and get rid of them, but with no success.

STRAWBERRY ROOT LOUSE (Aphis forbesi Weeld.)

Alabama F. L. Thomas (March 20): Eggs of this insect hatched by the middle of February.

BEANS

MEXICAN BEAN BEETLE (Epilachna corrupta Muls.)

GENERAL STATEMENT Neale F. Howard (1922-1923): The records of the spread of the Mexican bean beetle for the past season have been obtained almost entirely through the cooperation of the State

entomologists or entomological workers in States where spread is recorded. The most noteworthy spread has been to the north, in Ohio, where it occurs as far north as Columbus, in Franklin County. This most northern infestation of which we have a record is about 150 miles from the most northern infestation which was recorded a year ago, viz., in Fayette County, Kentucky. It is believed that the insect spread at least 100 miles to the north during last season. The spread eastward in North Carolina, as determined by Prof. Franklin Sherman and coworkers, is also quite remarkable, the insect having spread about 75 miles from the most eastern point known to be infested last year and over 100 miles from the infestation recorded in Swain County last year. The spread eastward in South Carolina has also been quite extended, as shown by the records of Prof. A. F. Conradi and Mr. J. A. Berly. It is quite likely that the infestation extends from Grayson County in Virginia to Bland County, although no records are available, and it is also quite likely that the infestation extends from Mercer County in West Virginia across to Mason County on the Ohio River, although no records are available in this case. The only spread to the west recorded in 1923 are the one in Meade County, Ky., reported by Prof. H. Garman, and the infestation in Itawamba and Tishomingo Counties in Mississippi, reported by Prof. R. W. Harned and coworkers. To the south, the only records of spread we have are the one from Lee County, Ala., where it was found by Dr. F. L. Thomas, and from Lamar County, Ga., (formerly a part of Pike County), reported by the County agent and Mr. Gill, of the Bureau. Careful search for the beetle in southern Illinois and Indiana have been made by Messrs. W. P. Flint and J. J. Davis, of those States, and the beetle has not been found.

Alabama

F. L. Thomas (March 20): No large colonies have been found because of the comparatively small fall infestation, but a half dozen specimens have been found, all of which were alive.

New Mexico

R. Middlebrook (March 11): The bean beetle was found in hibernation still viable. It seems also to have withstood the winter. Owing to the fact that there has been a severe drought for the last three years, I am informed that very few beetles remain in hibernation in the bean growing sections of the dry part of the State.

CUCUMBERS

WESTERN 12-SPOTTED CUCUMBER BEETLE (Diabrotica soror Lec.)

Oregon

A. L. Lovett: Observed insects in flight near Corvallis February 24. Report from Coos County on February 28, of injury to gardens and ornamentals. Found at Corvallis feeding on clover March 2.

STRIPED CUCUMBER BEETLE (Diabrotica vittata Fab.)

New Mexico R. Middlebrook (March 11): Diabrotica vittata is now emerging and does not seem to have suffered from the unusually severe winter.

TWELVE-SPOTTED CUCUMBER BEETLE (Diabrotica 12-punctata Oliv.)

Mississippi H. W. Allen (March 12): A few adult Diabrotica 12-punctata have been noted on green weeds and in oats and rape.

POTATO

POTATO TUBER MOTH (Phthorimaea operculella Zell.)

Virginia Herbert Spencer (Nov. 11, 1923): The outbreak of the potato tuber moth on the Eastern Shore of Virginia extends well up into Accomac County. Careful scouting during the last two weeks has established the region of maximum damage to be between Eastville and Exmore. South of Eastville larvae of the insect were found in fewer numbers as far down the peninsula as Kiptopeke. North of Exmore the survey is still unfinished, but larvae have been taken at Onley, Onancock, Parksley and Bloxom. At the last place only one larva was found by five inspectors, who looked over many fields.

The Eastern Shore of Virginia Produce Exchange, which handles practically all of the potatoes of the district, has agreed not to sell any seed from Virginia, or ship any, until January 1, 1924. By that time the condition of stored home-grown seed with respect to tuber worm infestation can be easily determined by their inspectors. No infested seed will be accepted by the exchange for shipment.

A tuber moth campaign has been planned and started in the affected region by the Virginia Truck Experiment Station. Arrangements have been made to fumigate most of the home-grown seed before planting time. To date two storage houses of a combined capacity of 250,000 cubic feet have been treated.

SQUASH

SQUASH LADY-BEETLE (Epilachna borealis Fab.)

Alabama F. L. Thomas (March 20): Forty-three adults received from Chambers County. These had been hiding under the bark of an old pecan tree.

SOUTHERN FIELD-CROP INSECTS

COTTON

BOLL WEEVIL (Anthonomus grandis Boh.)

GENERAL STATEMENT

B. R. Coad (March 17): The regular annual examinations which have been made by the Delta Laboratory for the past ten years to determine prospects of the boll weevil emergence in the spring have just been completed. In making these records each year the same fifteen selected points in northern Louisiana have been used to represent the different types of hibernation conditions found in that district. A total of over 4000 pounds of Spanish moss was collected from these points and examined carefully for live and dead weevils. From these records the ratio of both live and dead weevils per ton of moss is computed, in order to get a comparative numerical expression, and past experience has shown that this gives a fair index to the spring emergence which may be expected. The records for the past ten years are given in the following table:

Year	Live Weevils per ton of moss	Dead weevils per ton of moss
1915	10.0	414.0
1916	24.0	136.0
1917	8.0	144.0
1918	1.7	48.9
1919	4.0	53.0
1920	9.5	15.8
1921	22.0	26.0
1922	127.0	2.2
1923	19.0	42.0
1924	0.5	63.4

It will be noted from the above tabulation that the number of live weevils in the moss this year is exceedingly low, thus indicating a probable low emergence from hibernation in the coming spring. However, it should also be remembered that these figures represent only an approximation of conditions and have only a comparative value in a very general way. For example, the record is somewhat lower than that indicated for 1918, but the opposite would be indicated by the temperature records, since in the winter of 1917-1918 the absolute minimum at Tallulah was 1 (one) above zero, while in the 1923-1924 it was 10 (ten) above zero. The weevils in hibernation in the fall of each of those years seem to have been somewhat similar, and it is quite probable that as far as the Tallulah neighborhood is concerned the emergence will be much the same. Field observations during the summer of 1918 showed a sufficient emergence of weevils in the spring to cause serious damage to the cotton crop, and the low injury of that year was more due to the drought of the summer than to the low emergence of weevils.

The above figures indicate that the farmers will have a very good crop chance at the outset this year in the district represented by the Tallulah examination at least, but the final outcome of the crop still depends largely on the summer weather conditions, and no one should relax in the weevil fight on the basis of the prospect of light weevil infestation, because sufficient weevils will still emerge to do serious damage with a normal or unfavorable summer. Furthermore, it should be remembered that the above figures do not necessarily apply to the entire cotton belt, and each district should bear in mind the minimum temperatures they have experienced during the winter and figure accordingly. Also the type of shelter available is exceedingly important, as these records are taken in the northern portion of the zone in which Spanish moss is found, and during cold winters a heavier mortality is found in this zone than in the somewhat more northerly sections where the weevils secure better shelter.

Oklahoma

E. E. Scholl (March 18): A general snowstorm of the last few days has delayed the emergence of insects in Oklahoma. There was some activity of boll weevils before this cold spell struck Oklahoma but at the present time there is very little to report.

SUGAR CANE

SUGAR-CANE BORER (*Diatraea saccharalis* Fab.)

Louisiana

Monthly Letter of the Bureau of Entomology, No. 118, February, 1924: L. H. Janes, of the Bureau of Agricultural Economics, cooperating with T. E. Holloway and W. E. Haley of the Bureau of Entomology, estimates the normal loss to sugar-cane in Louisiana due to the sugar-cane moth borer to be 570 pounds of sugar per acre. The loss for 1922 is estimated at 510 pounds, and for 1923 at 690 pounds. The borer is responsible for similar damage in Florida, Mississippi, and Texas, and it also seriously injures corn, broomcorn, kafir, etc.

FOREST AND SHADE-TREE INSECTS

MISCELLANEOUS FEEDERS

WHITE-MARKED TUSSOCK MOTH (*Hemerocampa leucostigma* S. & GA.)

Illinois

W. P. Flint: Egg masses of the tussock moth are more numerous than usual in cities in the northern half of Illinois. The infestation is not as heavy as that occurring in some localities during the past outbreaks of this insect, but is more general than any outbreak which has occurred in the last ten years. Collections made in the vicinity of Chicago and at Urbana showed a very small percentage of parasitism in the eggs.

FOREST TENT CATERPILLAR (Malacosoma pluvialis Dyar and
M. disstria Hübner.)

Oregon

Don C. Mote (March 5): The tent caterpillars, Malacosoma pluvialis and M. disstria, will probably be common but not sensationally abundant this season. A partial survey of the region which was heavily infested last year yielded 160 egg masses in about three hours with four persons scouting. Although alder and willow are the major host plants, they contained very few overwintering egg masses, following excessive defoliation of last spring. Most of the egg rings were found on vine maple (Acer circinatum) which apparently had not been attacked the previous season. A microscopical examination of the egg masses yielded the following data:

Caterpillars	172
Undeveloped	397
Egg parasites	81
Total eggs examined	650

BAGWORM (Thyridopteryx ephemeraeformis Haw.)

New Mexico

R. Middlebrook (March 11): The bagworms are more numerous than usual.

ELM

EUROPEAN ELM SCALE (Cossyparia spuria Modeer)

Nex Mexico

R. Middlebrook (March 11): The European elm scale is increasing in the northern part of this State.

MAPLE

PIGEON TREMEX (Tremex columba L.)

New York

E. P. Felt and M. D. Leonard (December 6): Sugar maples in Champlain, Chateaugay, Messena, Mohra, and Bombay were all more or less badly affected with the pigeon horn-tail and showed evidence of the work of the attending parasite Thalessa.

SUGAR-MAPLE BORER (Glycobius speciosus Say)

New York

E. P. Felt and M. D. Leonard (December 6, 1923): Observed rather commonly in Champlain, Chateaugay, Messena, Mohra, and Bombay, New York. Many sugar maples in these towns are in a dying or greatly weakened condition from the attacks of this pest.

BOXELDER PLANT-BUG (Leptocoris trivittatus Say)

District of
Columbia

Wm. Middleton: The boxelder plant-bug has been an annoying house guest in the neighborhoods of Sheridan Circle and Georgetown, Washington, D. C.

GLOOMY SCALE (Chrysomphalus tenebriosus Comst.)

Alabama

Wm. Middleton: The gloomy scale has been reported by M. F. Howard, of Truck-Crop Insect Investigations, in injurious quantities on maples during the past year at Birmingham.

POPLAR

FALL CANKERWORM (Arsophila pometaria Harr.)

New York

E. P. Felt and M. D. Leonard (December 6, 1923): Female found on poplar trunk.

Ohio

H. A. Gossard (March 22): Mr. C. F. Irish, a landscape gardener of Cleveland, reported to us that the cankerworm moths were seen coming up about the first week in March. No field work has yet commenced.

COTTONWOOD SCALE (Chionaspis orthobobis Comst.)

New Mexico

R. Middlebrook (March 11): Cottonwood scale was found abundantly on some trees in this valley.

WILLOW

WILLOW APPLE-GALL (Pontania pomina Walsh)

New York

E. P. Felt and M. D. Leonard (December 6, 1923): Galls abundant on willows at Chateaugay and Champlain.

RUSTY TUSsock MoTH (Notolophus antiqua L.)

New York

E. P. Felt and M. D. Leonard (December 6, 1923): An egg mass on willow at Chateaugay.

I N S E C T S A T T A C K I N G

G R E E N H O U S E A N D O R N A M E N T A L P L A N T S

CHRYSANTHEMUM

CHRYSANTHEMUM GALL-MIDGE (Diarthronomyia hypogaea
F. Loew)

Illinois

Charles C. Compton (March 6): There has been a severe outbreak of the chrysanthemum gall-midge in a greenhouse at Aurora.

EUONYMUS

EUONYMUS SCALE (Chionaspis euonymi Comst.)

District of
Columbia

Wm. Middleton: The euonymus scale is present in injurious quantities in one section of Washington, D. C.

ARBORVITAE

ARBORVITAE LEAF-MINER (Argyresthia thuiella Pack.)

GENERAL

Wm. Middleton: The arborvitae leaf-miner is increasing about Washington, D. C., injuring arborvitae at the Arlington National Cemetery, Va., and in Chevy Chase.

BOXWOOD

BOXWOOD LEAF-MINER (Monarthropalpus buxi Labou)

Connecticut

W. E. Britton (November 23, 1923): A few box plants are badly infested at Waterford.

District of
Columbia

Wm. Middleton: During the past year the boxwood leaf-miner has become established in some locations in Washington, D. C., and promises to be a serious pest.

I N S E C T S A T T A C K I N G M A N A N D

D O M E S T I C A N I M A L S

MAN

CASTOR-BEAN TICK (Ixodes ricinus L.)

Oregon

Don C. Mote (February 15): Two ticks taken at Mohler, Tillamook County, from the neck of a man. Specimens determined by Don C. Mote, and verified by Dr. Ransom.

CATTLE

OX WARBLE (Hypoderma lineatum DeVill.)

Illinois

Charles C. Compton (February 12): The ox warble is not as abundant in cattle this winter as during the past three years.

H O U S E H O L D P E S T S A N D I N S E C T S

I N J U R I O U S T O S T O R E D P R O D U C T S

TERMITES (Reticulitermes flavipes Kol.)

Michigan

R. H. Pettit (March 10): This insect is becoming more and more abundant in Michigan everywhere and it is attacking buildings in our cities more and more commonly. A few

weeks ago we examined into a case of a very serious infestation in Battle Creek where a large building was seriously injured at one of the food factories. Shortly after that a good sized boarding house, or what amounts to a flat building, in Grand Rapids was attacked. We are just planning to visit Paw Paw to look into a bad case in a dwelling house, and so it goes. New cases coming in all the time.

- Indiana J. J. Davis (March 24): It is rather interesting to note that we are already receiving reports of white ant destruction as far north as Logansport. This pest is becoming quite a serious one in Indiana.
- Missouri L. Haseman: Several reports have been received recently from different localities showing serious damage to timbers, rugs, and other materials in homes.

BEAN WEEVIL (Melabris obtectus Say)

- Michigan R. H. Pettit (March 10): The bean weevils is gradually spreading over the State. This is important, since Michigan produces more white beans than any other State in the Union and most of Michigan heretofore has been free from the weevil. This fact led us to put on a campaign last fall against this pest.

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THE INSECT PEST SURVEY BULLETIN

A periodical review of entomological conditions throughout the United States,
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INSECT PEST SURVEY BULLETIN

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No. 2

OUTSTANDING ENTOMOLOGICAL FEATURES IN THE UNITED STATES FOR APRIL, 1924

During the past month the Hessian fly situation remained about as during March throughout the West-Central and Upper Mississippi Valley States. Following the abnormally wet fall of 1923 a very serious and unusual Hessian fly development has taken place in northwestern Kansas, extending far west of the region where the Hessian fly is usually known as a pest.

Throughout that part of the region covered by the chinch bug extending from Illinois to Kansas, this insect seems to have passed the winter under unusually favorable conditions. The bugs were observed on the wing on April 16 in central Illinois, between the 10th and 15th in central Missouri, and by the 15th and 21st in southern Nebraska. Emergence in Kansas was observed as early as April 7.

A very serious greenbug outbreak was reported from southern Oklahoma during the third week of April.

Moths of the fall cankerworm are appearing in large numbers in central and southern New York State and Ohio.

The tent caterpillar is very generally prevalent and apparently much more numerous than usual throughout the New England and Middle Atlantic States southward to Delaware.

The pear psylla began egg laying in southern New York on April 6 and heavy egg laying was reported in the northern tier of counties during the third week in the month.

The application of 500,000 pounds of paradichlorobenzene in the Georgia Peach Belt last fall appears to have been highly successful in controlling the peach borer. The plum curculio in this same region passed the winter in unusually good condition and will probably be more serious than usual this year.

A very interesting outbreak of the cowpea curculio, as a pest of citrus, is reported from Florida. These beetles eat the young shoots to such an extent that recently set trees are sometimes killed back one foot.

The Australian tomato weevil is reported for the first time from Mobile County, Alabama.

An aphid of a species not yet determined is reported as appearing on orange in great numbers in portions of southern Florida and doing important damage.

OUTSTANDING ENTOMOLOGICAL FEATURES FOR CANADA, MAY 1, 1924

Spring weather conditions have been somewhat variable throughout the Dominion of Canada. In British Columbia the season has been exceptionally early, the first cultivation of the soil being general in the southern interior sections of the Province by the middle of March. On the Canadian Prairies the season is well advanced. In Alberta there is an abundance of moisture in the soil due to unusual wet conditions. In Manitoba cultural operations were well under way by the first week of April but about fifteen inches of snow in the middle of the month brought operations to a standstill. In Eastern Canada the early spring temperatures have in general been above normal but snow was still quite plentiful in protected places by the middle of April.

The cankerworm, Alsophila pomataria Harr., has been slowly increasing in Kings County, N. S., during the last four years, and it is probable that larvae will be numerous in the Annapolis Valley this spring. A heavy infestation is anticipated in southern Alberta during the coming season.

The apple red bug, Lygidea mendax Reut., has been increasing in numbers for some years in the Annapolis Valley, N. S., and if it has overwintered satisfactorily its depredations will likely be such as to necessitate control measures being undertaken in 1924.

The fall webworm, although of no great economic importance at present, is on the increase all along the St. John River Valley, N. B. In 1923 it was common on alder and other shrubs and bushes along roadsides and line fences, as well as in orchards. This insect was likewise abundant throughout the Gatineau Valley near Ottawa during the autumn of 1923.

During late September and early October, 1923, the moths of the chain-dotted geometer, Cingilia catenaria Dru., occurred in enormous flights all over Nova Scotia, being noted as especially numerous at Aylesford Bog. As the larvae feed on cranberry as well as various trees and shrubs, an outbreak on the former may be expected during the coming summer.

The garden springtail, Sminthurus hortensis Fitch, was recorded in 1923 as injurious at Wilmot and Truro, N. S., and large numbers were seen on spinach at East Lawrencetown, Halifax County, Nova Scotia, but no serious injury resulted at the last place. Early spring injuries from these insects are expected to occur again in 1924.

The cabbage maggot, was reported in 1923 for the first time in four years at Lethbridge, Alberta, indicating the possible ascendancy of this insect as a pest.

Among the wireworms of economic importance at Saskatoon, Saskatchewan, during 1923, the species Iudius aeneipennis Kby. and Cryptohyponus nocturnus Esch. are the most important. They were found to be associated with cultivated fields rather than sod lands. It is anticipated that these pests will be troublesome in central and southern Saskatchewan this season. Wireworms and false wireworms are going to be our worst trouble in northern Alberta and in fact over most of the province during 1924.

The lilac leaf-miner Gracilaria syringella Fab., an important European pest, was found badly attacking lilacs in Ottawa City during the summer of 1923. There appears to be no previous Canadian record of this pest.

CEREAL AND FORAGE - CROP INSECTS

WHEAT

HESSIAN FLY (Phytophaga destructor Say)

- Illinois W. P. Flint: Examinations made during the past week in southern and central Illinois failed to show any emergence of the fly up to April 10.
- Missouri L. Haseman (April 25): Some interest is developing in the possible damage from the spring brood of the Hessian fly. Generally speaking, however, the fly situation except in restricted localities is less threatening in Missouri than a year ago.
- Nebraska M. H. Swenk (April 21): Regarding the Hessian fly in Nebraska, there is little to add to my rather full statement dated March 12, except that a subsequent personal survey of the area of heavy infestation in Furnas County reveals the fact that the heavy midsummer brood of 1923 that developed in the volunteer wheat still largely persists there in the puparium stage, and these puparia, together with those of the main fall brood in the early seeded winter wheat, will undoubtedly form a heavy spring brood of flies. Flies were already beginning to emerge in small numbers during the third week in April.
- Kansas J. W. McColloch (April 16): A trip through western Kansas last week indicated that, following the abnormally high rainfall of last fall, the Hessian fly is far above the average in abundance in the region in northwestern Kansas extending from Smith, Osborne, and Russell Counties westward to Thomas and Rawlins Counties. Another center of serious infestation seems to be located in the counties surrounding Riley County. At the time of this survey from 5 to 75 per cent of the grain was infested.

CHINCH BUG (Blissus leucopterus Say)

- Illinois W. P. Flint: The weather of April has been favorable to this insect. On April 16 some bugs were observed flying in the central Illinois counties. There has been no general movement out of winter quarters up to the present time, April 19.
- Missouri L. Haseman (April 23): In central Missouri scattering flights of chinch bugs were observed between the 10th and 15th of April. The chinch bug situation looks threatening in spite of severe winter, and farmers are preparing for another chinch bug combat.

Nebraska

M. H. Srenk (April 21): The chinch bug wintered successfully, according to our best information, along the southern boundary of the State, and by the third week in April was already appearing in large numbers in the wheat fields of Pawnee County, while farther west, in Furnas County, the bugs were just starting to leave the grass in numbers. Serious injury by the chinch bug is expected during the coming summer along the southern boundary of Nebraska.

Kansas

J. W. McColloch (April 16): Chinch bugs passed the winter with very little mortality. The numbers of bugs in bunch grass this winter was considerably larger than last year. Emergence from hibernation began on April 7.

GREENBUG (Toxoptera graminum Rond.)

Oklahoma

E. E. Scholl (April 19): We have received a report of a very serious greenbug infestation in the southern part of Payne County near Perkins, Oklahoma. The infestation has been verified this morning by County Agent C. H. Guernsey and Extension Agronomist G. C. Gibbons. I will undertake control measures right away.

GREAT PLAINS FALSE WIREWORM (Eleodes opaca Say)

Kansas

J. W. McColloch (April 17): Worms are said to have ruined the stand on a quarter of a section at Missler, necessitating the plowing up of the crop.

CORN

LARGER CORN STALK-BORER (Diatraea saccharalis Fab. var. crambidoides Grote)

Texas

T. C. Barber (April 15): First infested corn that I have observed this season was discovered today, at Brownsville.

ARMYWORM (Cirphis unipuncta Haw.)

Mississippi

H. W. Allen (April 15): The armyworm, at A. & M. College, present in moderate numbers; no appreciable damage noted. The overwintering brood has largely passed into the pupal stage without evidence of disease or parasites in sufficient abundance to hold the infestation in check.

ALFALFA

PEA APHID (Illinois pisi Kalt.)

Kansas

J. W. McColloch (April 17): An outbreak has developed in a small field at Manhattan. Other fields contain small numbers of aphids.

California

R. E. Campbell (April 8): The serious infestation reported last month in Los Angeles and San Bernardino Counties has been practically cleaned up by the aphid fungus Entomophthora aphidis Hoffm. which was stimulated by recent rainy weather.

CLOVER

WESTERN TWELVE-SPOTTED CUCUMBER-BEETLE (Diabrotica soror Lec.)

Oregon

Don C. Mote (April 4): This insect is still being reported as a damaging pest of seedling clover, in the vicinity of Corvallis.

CLOVER-LEAF WEEVIL (Hypera punctata Fab.)

Mississippi

H. W. Allen (April 15): A moderate infestation on clovers at A. & M. College, Damage negligible, due to the luxuriant growth of the host plants. Insect at present largely in pupal stage. Larval death rate in insectary material considerably less than 10 per cent.

CUTWORMS (Noctuidae)

Mississippi

H. W. Allen (April 15): In material consisting of well over a thousand specimens collected at A. & M. College this spring, two species, Feltia ducens Walk. or subgothica Haw. and Polia renigera, Steph. are the only species present in large numbers. These have been collected largely in clovers and rankly growing weeds. No extensive damage to crops has been noted. The first named species is largely in the last larval instar, while renigera is now passing rapidly into the pupal stage. Death by parasites or disease has been extremely low. (Determinations based on larvae examined by Mr. S. E. Crumb, U. S. Bureau of Entomology.)

VEITCH

A VEITCH APHID (possibly Illinodia pisi Kalt.)

Oregon

Don C. Mote (April 9): Growers and agronomists report aphids more abundant at this time than usual. Damage will be severe at Corvallis and vicinity unless checked by weather conditions or natural enemies.

FRUIT INSECTS

APPLE

APHIDIDAE

Illinois W. P. Flint: Aphid eggs have been hatching for some time in orchards in the southern end of the State, the sequence of the different species being that usually found, eggs of the apple-grain aphid hatching about one week before those of the rosy, or the green aphid. Up to the present time, examinations in central and southern Illinois orchard districts have shown but few of the green and rosy species present. The grain aphid is very abundant. In western Illinois, a slightly higher percentage of the green aphid has been found, but the numbers appearing in this section of the State are not great enough to cause expectation of serious injury. Syrphid fly larvae are present in large numbers.

Missouri L. Haseman (April 23): The plant-lice began hatching the first week in April and some orchards showed heavy infestation. Where the lubricating-oil emulsions were applied late in scale-infested orchards, they gave excellent control of the young lice.

Utah George F. Knowlton (April 4): Eggs of plant-lice are numerous on apple. Aphis pomi DeG. and Rhopalosiphum prunifoliae Fitch are the common species in the northern part of this State, with the addition of Anuraphis roseus Baker farther south.

GREEN APPLE APHID (Aphis pomi DeG.)

Massachusetts A. I. Bourne (April 24): On the 14th of April we noted a few green apple aphids hatching, but they did not begin to come out in numbers until about the 19th.

Connecticut M. P. Zappe (April 25): At Milford the aphids average about 1 to a bud. The buds are just opening. The weather has been rather cool for the season and it has been very windy.

APPLE-GRAIN APHID (Rhopalosiphum prunifoliae Fitch)

Maryland E. N. Cory (April 7): This insect is in the egg-hatching stage at Hagerstown.

FRUIT-TREE LEAF-ROLLER (Archips argyrospila Walk.)

New York J. E. Connelly (April 12): In Ontario County egg masses of this insect are occasionally observed.

APPLE AND THORN SKELETONIZER (Hemerophila pariana Clerch.)

Connecticut J. L. Rogers (April 10): Several adults were flying about a building in New Haven and resting on the windows.

TENT CATERPILLAR (Molacosoma americana Fab.)

Massachusetts A. I. Bourne (April 24): I have a report, relative to the hatching of tent caterpillars from northern Worcester County, that the first young were noted appearing on April 17. Here at Amherst, the first young were seen to be hatching on April 20 and 21. This is exactly the same date when the first larvae were noted a year ago.

Connecticut M. P. Zappe (April 25): Caterpillars hatched a few days ago at Hamden and Milford. Webs can be seen easily on trees beside roads. The larvae are feeding on opening buds. They appear to be more plentiful than last year. It has been cool for the season and rather windy.

New York C. C. Wagoner (April 19): Tent caterpillars seem rather common at Ulster.

New Jersey Ralph B. Lott (April 22): At this date tents of this caterpillar are very numerous on apple and wild cherry throughout the State. First egg masses to hatch were noted on April 5. At this date tents are about as large as a silver dollar and as many as 20 have been noted on a single tree.

Delaware C. O. Houghton (April 11): Eggs of this species are just beginning to hatch at Newark. This is two weeks later than the time of hatching for 1922. Egg masses are very numerous this year on apple, peach, and cherry in this vicinity and a heavy infestation is expected.

Oregon Don C. Mote (April 9): At Corvallis eggs are hatching and larvae are building nests. The first molt has not yet occurred. Found one nest on a cherry tree. They are apparently not as abundant as in an average year. The season is advanced about one week.

SPRING CANKERWORM (Paleacrita vernata Peck)

New York W. T. M. Forbes (April 13 and 14): At Ithaca spring cankerworms are much rarer in trap than pometaria.

FALL CANKERWORM (Alsophila pometaria Harr.)

New York W. T. M. Forbes (March 28): Moths are swarming in great abundance at Ithaca. The spring cankerworm has not been seen. (April 13-14) Abundant in trap.

RED-FOOTED FLEA-BEETLE (Crepidodera erythropus Melsh.)

Maryland J. P. Burdett (April 17): At La Plata the flea-beetles were very numerous on the tender foliage where they were riddling the leaves. The damage could be considered serious and would be the occasion of alarm to any fruit grower. Control: Two applications of Bordeaux mixture 4-5-50 plus $1\frac{1}{2}$ pounds of arsenate of lead.

BUFFALO TREEHOPPER (Ceresa bubalus Fab.)

South Dakota H. C. Severin (April 15): Trees which frequently contain many eggs of this pest are being sold from nurserymen to our farmers and orchardists. This has become serious enough for the State entomologist to feel compelled to take action to stop the practice of selling such stock in this State. The damage is especially severe on young stock.

SAN JOSE SCALE (Aspidiotus perniciosus Comst.)

New York J. E. Connelly (April 12): This pest is generally prevalent in Ontario County. One orchard is badly infested at Geneva.

C. J. Wagoner (April 12): The infestation by the San Jose scale is generally heavy on currants and gooseberries in Ulster County.

Missouri L. Haseman (April 23): During the past month very extensive dormant spraying for the control of the scale has been done. Under Missouri conditions the winter mortality was very high, and from experimental work with dormant sprays and from examinations of numerous commercial orchards receiving dormant sprays throughout the State, we find a very high percentage of control. We believe the crisis as regards recent difficulty in keeping the scale under control in Missouri has passed.

OYSTER-SHELL SCALE (Lepidosaphes ulmi L.)

South Dakota H. C. Severin (April 15): This scale is increasing in abundance throughout the eastern third of the State and the Black Hills. In some sections it is killing trees.

SOURFY SCALE (Chionaspis rufura Fitch)

New York P. J. Chapman (April 5): At Red Hook two orchards are badly infested.

EUROPEAN RED SPIDER (Paratetranychus pilosus C. & F.)

Massachusetts

A. I. Bourne (April 24): In regard to the European red mite, I can say we have definite information as to its presence in Plymouth and Bristol Counties in considerable abundance, so that we now have definite information that the pest is distributed over practically the whole State, although thus far we have had no definite reports of its presence on the Cape. Although in orchards where it is proving very abundant it is being found in considerable numbers even on McIntoshes, which from our experience of the last year or so have not been particularly likely to be infested, the pest seems to center its attention on Baldwins. Here in the College orchard we are also noting it in considerable abundance on McIntoshes and Wealthies.

FRUIT-TREE LEAF SYNETA (Syneta albida Lec.)

Oregon

Don C. Mote (April 9): Syneta is reported as being on the increase, at Corvallis. On this date the beetles descended like raindrops when a limb was jarred. The week before only an occasional one was found.

PEARPEAR THRIPS (Taeniothrips inconsequens Ezel)

New York

C. C. Wagoner (April 12): Adults were first found on April 10 in Ulster County. They have been increasing slowly since. (April 19): Pear thrips damage does not appear to be so severe as last year.

PEAR PSYLLA (Psylla pyricola Foerst.)

New York

C. R. Crosby and assistants: The pear psylla appears to be more numerous than it has been any season during the past four years in Onondaga County. Very few eggs had hatched in this county up to April 19. In Niagara County egg laying was well under way on April 14. In Albany and Orleans Counties egg laying was started about April 12 and in Ulster and Dutchess Counties the first egg laying was observed on April 6. The pest is reported as being moderately abundant throughout the fruit-growing sections of the State.

PEACHPEACH BORER (Aegeria exitiosa Say)

Georgia

C. I. Snapp (April 17): About 500,000 pounds of para-dichlorobenzene were used in the Georgia Peach Belt last fall. The results have been uniformly good, and growers are greatly pleased with the control. It can not be used with safety on one, two, and three year old trees in this latitude.

LESSER PEACH-TREE BORER (Aegeria pictipes G. & R.)

Georgia O. I. Snapp (April 17): This pest is unusually abundant in southern Georgia orchards this spring.

PLUM CURCULIO (Conotrachelus nenuphar Hbst.)

Connecticut J. L. Rogers (April 23): At Mt. Carmel they are evidently just coming out of hibernation.

Georgia O. I. Snapp (April 17): Irrespective of the abnormally cold winter the curculio is appearing in numbers, and apparently the mortality during hibernation has not been higher than usual. Adult curculios have been appearing in numbers since March 29. One hundred and seventy-five beetles were collected on 107 trees this morning. The largest number collected on any morning during the 1923 season on these same trees was 138. Hibernation records at the insectary show that to date Bermuda grass has carried through over 50 per cent of the adult curculios. The first egg was noticed in the field on April 9. Many eggs have been found daily since that date.

TWELVE-SPOTTED CUCUMBER BEETLE (Diabrotica 12-punctata Oliv.)

Georgia O. I. Snapp (April 17): At Fort Valley they are present as usual, and doing some damage in peach orchards by devouring the small peach before the shedding of the calyces.

Mississippi J. M. Langston (April 12): At Starkville damage is slight.

SAN JOSE SCALE (Aspidiotus perniciosus Comst.)

Georgia O. I. Snapp (April 17): The San Jose scale has been pretty generally killed out by low temperatures during the past winter and by more careful spraying. A large amount of lubricating-oil emulsion was used in the Georgia Peach Belt during the past winter. This was both of the heated and cold-stirred emulsions. Usually this scale breeds all winter in this latitude, but on account of the above conditions no crawlers have been observed since the occurrence of the low temperatures. No injury to peach trees has resulted to date from the use of the lubricating-oil emulsions.

GRASSHOPPERS (Acridiidae)

Georgia O. I. Snapp (April 15): Grasshoppers are troublesome in some orchards at Fort Valley, often devouring the whole of a small green peach.

RASPBERRY

STRIPED TREE CRICKET (Oecanthus nigricornis Walk.)

New York

K. E. Paine (April 12): One planting in Chautauqua County is badly infested with eggs.

C. R. Crosby (April 16): Infested raspberry canes were received from Katonah.

GRAPE

KATYDIDS

Indiana

J. J. Davis (April 23): An unusual number of katydid eggs have been sent this spring for identification. Most of them were collected on grape and apple.

GRAPE LEAFHOPPER (Erythroneura comes Say)

New York

K. E. Paine (April 12): In Chautauqua County adults are abundant under dead leaves and grass.

GRAPE MEALY-BUG (Pseudococcus maritimus Ehrh.)

Michigan

R. H. Pettit (April 25): I have just returned from a trip to our grape belt; at Lawton I found Pseudococcus maritimus, which may perhaps well be called the grape mealy-bug, in enormous numbers in certain vineyards. They come out when the weather turns a little warm and retire under the loose bark when it chills. It is really a very serious infestation and apparently covers quite a bit of country, not being confined to one or two vineyards alone. The young mealy bugs, in the first stage, literally swarm over the old stocks and I will say that last year I observed the same insect in the same vineyard where they messed up the vine badly, coating them with honey-dew and webbing up the bunches of grapes. They also seem to cause many grapes to fall and made very many of them unsightly. Preliminary experiments using nicotine, strong lime-sulphur and Sunoco spraying oil were made. Our grapes are beginning to show a slight swelling of the buds but the buds have not yet burst. An examination of the roots and tops of leguminous cover crops such as clover and vetch failed to reveal any of the mealy bugs.

CURRANT

CURRANT APHID (Myzus ribis L.)

Delaware

C. O. Houghton (April 23): The first examples of this species are beginning to appear on currant leaves at Newark.

Utah G. T. Knowlton (April 4): Eggs of Myzus ribis L. are very numerous on the red currant in the northern part of this State. Last year they did serious damage in most places where this currant is raised in Utah.

IMPORTED CURRANT BORER (Synanthedon tipuliformis L.)

Delaware C. O. Houghton (April): Examination of currant bushes at Newark this spring indicates that less injury was caused in this vicinity by this species last year than is usual.

GOOSEBERRY

GOOSEBERRY BUD MIDGE (Rhopalomyia grossulariae Felt)

Delaware C. O. Houghton (April 1): Cuttings from bushes have recently been brought in which display the characteristic "witches-brooms" formed by this species as figured by Houser and Felt, and I have determined them as indicated above. It is the first time that this injury has come to my attention.

PECAN

AMBROSIA BEETLES

Mississippi R. W. Harned (April 21): Numerous complaints have been received from different sections of the State in regard to ambrosia beetles in pecan trees. Last winter was probably more severe on pecan and other orchard trees than any of the preceding five or six winters. The ambrosia beetles are probably attacking the trees that have been injured by the cold weather.

HICKORY APHID (Longistigma caryae Harris?)

Georgia O. I. Snapp (April 11): Aphids are very abundant on a 5-year old pecan tree. They are numerous enough to have devitalized the trees had the grower not used nicotine sulphate.

CITRUS

COWPEA CURCULIO (Chalcodermus aeneus Boh.)

Florida W. W. Yothers (April 17): It is very seldom that the cowpea weevils become injurious to citrus trees. On March 25, 1922, however, at Eagle Lake they were present in great abundance on new shoots on citrus trees and were causing considerable damage. This year on April 16 they were again present in considerable numbers on the tender foliage on recently set trees. In fact, they had been present on these trees for a considerable length of time. The new shoots were attacked by clusters of these insects and the damage in preventing growth was considerable. This field had been planted in cowpeas in

1923 and disked under in the fall. The weevils had been picked once and were present on the day of my visit in large numbers. They had eaten the young shoots so continuously that the upper foot of the recently set trees had been killed and only the more vigorously growing shoots near the base survived. It is very doubtful, however, if any tree was really killed by this pest.

ORANGE

AN APHID (species undetermined)

Florida

A. H. Beyer and W. W. Yothers (March 26-April 12): An aphid, the exact identity of which has not yet been positively determined, is present in enormous numbers on orange in portions of southern Florida and is doing very important damage. (Further information concerning this outbreak can doubtless be furnished in the next issue of the bulletin.)

TRUCK - CROP INSECTS

MISCELLANEOUS FEEDERS

IMBRICATED SNOOT-BEETLE (Epicaerus imbricatus Say)

Mississippi R. W. Harned (April 21): Several reports have been received regarding the damage caused by the imbricated snout-beetle in George County, Miss. The correspondents state that these insects are attacking all kinds of green foliage, but mention especially turnips and sand pears.

POTATO-TUBER MOTH (Phthorimaea operculella Zell.)

California Weekly News Letter, State of California, Dept. of Agriculture, Volume 6, No. 7 (April 5): A committee of Colma Potato Growers, April 3, will visit Sacramento for the purpose of checking the possibility of the application of this method (fumigation) to potatoes going to the northwest. The potato growers in the Colma district estimate that their losses last year were in the neighborhood of \$40,000, due to the markets of the Northwest being closed to them, because of the presence of the tuber moth.

AUSTRALIAN TOMATO WEEVIL (Desiantha nociva Lea)

Alabama J. E. Graf (April 25): I have just received a letter from Mr. Otto Brown, Chief of the Division of Plant Industry, State of Ala., in which he communicates report of the finding of the Australian tomato weevil in two places 10 miles apart just outside of the city limits of Mobile.

Mississippi R. W. Harned (April 21): Mr. H. P. Loding of Mobile, Ala., has written us that a specimen of the so-called Australian tomato weevil has been found at Orchard, Mobile County, Ala. This specimen was found in the pupa stage under a log by Dr. Van Aller, and the adult emerged on April 16. This is the only record we have of this insect occurring in Alabama. So far it has been found in only five counties in Mississippi - Hancock, Harrison, Jackson, Pearl River, and Stone.

POTATO

POTATO APHID (Macrosiphum solanifolii Ashm.)

Virginia H. Spencer (April 25): The pink and green aphid is appearing early this year. There is just a sprinkling of them now.

COLORADO POTATO BEETLE (Leptinotarsa decemlineata Say)

Mississippi F. F. McGehee (April 15): Only a few specimens have been found at Holly Springs to date.

J. E. McEvilly (April 24): Less than 1 per cent of the plants were infested with this insect. Colorado potato beetles under control with arsenate of lead, at McComb.

Alfred Lutken (April 26): Very few adults seen. Larvae now appearing in large numbers at Picayune.

CABBAGE

IMPORTED CABBAGE WORM (Pontia rapae L.)

Delaware C. O. Houghton (April 17): Saw first examples of this species on wing at Newark; this is considerably later than usual.

CABBAGE APHID (Brevicoryne brassicae L.)

Virginia H. Spencer (April 11): This insect is appearing in considerable numbers in the eastern Virginia trucking districts. Many growers are starting to dust with nicotine dusts.

STRAWBERRY

A STRAWBERRY ROOT WEEVIL (Brachyrhinus rugifrons L.)

Washington D. C. Note (April 8): Correspondents reported strawberry root weevil increasing in abundance at Vancouver.

RED SPIDER (Tetranychus sp. ?)

New York L. C. Tyler (April 19): This insect is reported from Herstead, as present in small numbers.

BEANS

MEXICAN BEAN BEETLE (Eoillachna corrupta Fuls.)

Alabama N. F. Howard (April 16): Hibernation studies in the field near Birmingham have resulted in finding more beetles per unit of area than during the previous two winters; also, larger colonies and more colonies were found. While it is too early to give percentages of survival in the hibernation cages, it is expected that the survival will be somewhat lower than the average of the two preceding seasons. The severe winter caused the beetles to remain absolutely dormant during the greater part of the winter, and activity did not start until April 5.

PEAS

PEA APHID (Illinoia pisi Kalt.)

Mississippi R. W. Harned (April 21): The pea aphid is appearing in certain parts of the State, especially in the important truck-growing section in the southwestern part.

California R. E. Campbell (April 8): Counts of 10 feet of row showed an average of from 1 to 40 aphids, with an average for the entire 1500 acres of 5 per 10 feet of row in the Santa Clara Valley. Coccinellids and a few syrphids were observed, but there was not much activity as yet.

LETTUCE

A MYRIPOD (Probably Scolopendrella sp.)

Indiana J. J. Davis (April 23): A species of a myriopod, probably Scolopendrella sp., was first reported damaging lettuce in greenhouses by eating roots, at Indianapolis, January 8. Considerable damage was reported in this greenhouse, and reports from other sections of the State indicate similar injury in other localities.

A SCAVENGER BEETLE (Trox suberosus Fao.)

Indiana H. F. Dietz (April 22): A scavenger beetle has been sent into this office for identification from Greencastle where it occurred in large numbers in the soil of lettuce houses. The lettuce grower informs us that the adult beetles also feed on the leaves of lettuce at night. Poisoned bran bait is being tried as a control.

RHUBARB

A LEAF BEETLE (Gastroidea aenea Melsh.)

Nebraska M. H. Swenk (April 21): From Morrill County comes a report that during the third week in April rhubarb plants in a garden had the new leaves covered with a leaf-beetle, which threatened to do serious injury to the rhubarb leaves.

BEETS

BEET-ROOT APHID (Pemphigus betae Doane)

Utah G. F. Knowlton (April 4): Pemphigus betae numerous, wintering over in certain beet fields where they were bad last year in Cache County.

S O U T H E R N F I E L D - C R O P I N S E C T S

COTTON

BOLL WEEVIL (Anthonomus grandis Boh.)

Texas T. C. Barcoer (April 17): The boll weevil has been reported from the Lower Rio Grande Valley as having been found in a number of fields during the past three or four days in the localities of San Benito, Rio Hondo, and Los Indios. Found the first adults I have seen in the Brownsville section today. Cotton is very backward, being nearly a month late due to a cold and unfavorable spring.

TOBACCO

TOBACCO FLEA-BEETLE (Epitrix parvula Fab.)

Florida F. S. Chamberlin (April 15): The tobacco flea-beetle is present this spring in about the usual numbers in spite of the previous severe winter, at Quincy.

A CUTWORM (Feltia annexa Treit.)

Florida F. S. Chamberlin (April 15): This cutworm is fairly numerous on tobacco, cabbage, and various truck crops, at Quincy.

TOBACCO BUDWORM (Heliothis virescens Fab.)

Florida F. S. Chamberlin (April 22): The tobacco budworm is appearing in the usual numbers. All types of tobacco are attacked by this insect.

RICE

RICE STALK-BORER (Chilo pleiadellus Zinck.)

Louisiana J. W. Ingram (April 21): After examinations of fields in several different localities in the rice section of southwestern Louisiana the mortality of overwintering larvae in rice stubble has been found to be about 83 per cent.

SUGAR-CANE BORER (Diatraea saccharalis Fab.)

Louisiana J. W. Ingram (April 21): After examinations of fields in several different localities in the rice section of southwestern Louisiana the mortality of overwintering larvae in rice stubble has been found to be about 83 per cent. Ninety-four per cent of the live borers found were D. saccharalis Fab.

F O R E S T A N D S H A D E - T R E E I N S E C T S

MISCELLANEOUS FEEDERS

TERMITES (Reticulitermes spp.)

GENERAL STATEMENT T. E. Synder (July 1, 1923 - April 8, 1924): During this period reports of termite damage to woodwork and contents of buildings ranged from Florida to New Hampshire and westward to Texas and Nebraska. Four reports were received from California.

Indiana H. F. Dietz (April 22): Termites recorded at Indianapolis during the past month have been Reticulitermes virginicus Banks. The swarming as recorded for three different dwelling houses in Indianapolis was on April 12.

J. J. Davis (April 23): Termites have been unusually abundant this year. The first record was on February 26. Most of the records of injury and swarming of termites have been received during the last two weeks. As might be expected, the infestations are unusually common in the southern half of the State, Logansport being the farthest-north record of injury reported this spring.

A POWDER-POST BEETLE (Lyctus sp.)

Indiana

J. J. Davis (April 23): Powder-post beetles were sent in from Columbus on March 3, where they are reported damaging acacia veneer wood used in the manufacture of furniture.

JUNIPER SCALE (Diaspis carueli Targ.)

Indiana

H. F. Dietz (April 22): The juniper scale was sent in to this office from Richmond on April 8. The plant infested was Irish juniper, Juniperus communis var. hibernica, sent into Indiana from a nursery near Philadelphia. This is the third record of this insect in Indiana, the other localities being Muncie and Indianapolis.

HEMLOCK WEBWORM (Gelechia apietisella Pack.)

Massachusetts

A. I. Bourne (April 24): Evergreen hedges in this particular region (Amherst) have been brought to our attention because of the fact that there is a very general and quite heavy infestation by the hemlock webworm. The characteristic work of this species on the leaves during this season before growth starts is very conspicuous.

BAGWORM (Thyridopteryx ephemeraeformis Haw.)

Missouri

L. Haseman (April 23): This pest was unusually troublesome in certain parts of Missouri last summer, and the overwintering bags have attracted much attention during the past month, particularly in the west-central part of the State.

FALL CANKERWORM (Alsophila pometaria Harris)

New York

G. M. Coddling (April): Moths were noticed in large numbers up to December 20, 1923. Egg masses are common on shade and fruit trees which apparently means much damage this spring.

Ohio.

H. A. Gossard (March 22): Mr. C. F. Irish, a landscape gardener of Cleveland, reported to us that the cankerworm moths were seen coming up about the first week in March. No field work has yet commenced.

BIRCH

BIRCH LEAF-SKELETONIZER (Bucculatrix canadensisella Charb.)

Connecticut R. B. Friend (April 23): The scarcity of cocoons containing live pupae compared with the number of old and empty cocoons would seem to indicate fewer of these insects this coming year, although there is much local variation.

BOXELDER

BOXELDER PLANT-BUG (Leptocoris trivittatus Say)

South Dakota H. S. Severin (April 2): This bug passed the winter successfully and is now laying eggs. It is one of the earliest of insects with us.

ELM

ELM SCURFY SCALE (Chionaspis americana Johns.)

Ohio H. A. Gossard (March 22): The elm scurfy scale on elm was received from Wellington January 30.

ELM BORER (Sanerda tridentata Oliv.)

Nebraska M. H. Swenk (April 21): During April the elm borer was reported as having seriously injured or killed elm trees in our southeastern counties.

LARCH

LARCH CASE-BEARER (Coleophora laricella Huebn.)

Connecticut W. E. Britton (April 24): Cocoons or winter cases were sent us March 15 by S. W. Eddy, who observed that chickadees were feeding upon them.

LOCUST

LOCUST BORER (Cyllene robiniae Forst.)

New York G. M. Coddington (March): Locust trees throughout Westchester County are badly infested. Many trees have been killed.

OAK

A MAY-FLY (Lachnosterna sp.)

Louisiana G. H. Bradley (April 5): These insects appeared abundantly around a flowering oak tree and were creating considerable commotion about 8 P. M.

POPLAR

A MAY-BEETLE (Lachnosterna arcuata Smith)

Louisiana

G. H. Bradley (April 14): This insect has defoliated four young, about five-year-old, trees on a lawn at Nound.

APHIDIDAE

(Neothomasia populicola Thos.)

Louisiana

G. H. Bradley (May 14): Reported from Nound as abundant on poplar trees.

MAPLE

MAPLE BORER (Synanthedon acerni Clem.)

Ohio

E. W. Mendenhall (April 28): Maple borers are doing considerable damage to the maple trees in the residential district of south Dayton.

I N S E C T S A T T A C K I N G G R E E N H O U S E

A N D O R N A M E N T A L P L A N T S

GREENHOUSE WHITE FLY (Trialeurodes vaporariorum Westw.)

New York

C. R. Crosby (March 21): An infested oxalis leaf was received from Earlville.

V A R I E G A T E D C U T W O R M (Peridroma margaritosa Haw.)

Indiana

H. F. Dietz (April 22): The variegated cutworm was recorded as a serious pest on greenhouse smilax at Richmond and at Greencastle. The greenhouse carnations were also injured by these caterpillars.

G R E E N J U N E B E E T L E (Cotinis nitida L.)

Indiana

J. J. Davis (April 23): On April 15 damage to a lawn by the green June beetle grub was reported from Marysville, Clark County, which is in the southern part of the State, not far from Louisville Ky.

IRIS

IRIS ROOT-BORER (Macronoctua onusta Grote)

Indiana

H. F. Dietz (April 22): Two parasites of the iris root-borer have been identified by specialists in the United States National Museum as Apanteles militaris Walsh and Arblyteles jucundus Brulle the former being identified by Mr. Cushman. This apparently is the first record of any parasites of the iris root-borer, which has been a very serious pest on ornamental iris plantings in Indiana.

ROSE

A MAY-BEETLE (Lachnosterna hirticula Knoch)

Mississippi Alfred Lutken (March 29): The first beetles were observed in flight just at dusk, hovering about rose and fig at Laytown.

ROSE LEAF-TYER (Cacoecia rosaceana Harr.)

Illinois C. C. Compton: The rose leaf-tyer is becoming numerous and troublesome to rose growers in the vicinity of Chicago.

AN ENEMY OF APHIDS

Louisiana G. H. Bradley (April 5): Individuals of the spotted lady-beetle (Megilla maculata DeG.) were noted to have left their hibernating quarters in an old oak tree and were eagerly searching rose bushes in the vicinity of Mound.

I N S E C T S A F F E C T I N G M A N

A N D D O M E S T I C A N I M A L S

M A N

OX WARBLE (Hypoderma lineatum DeVill.)

Idaho R. A. Muttkowski (April 19): Infestation with Hypoderma lineatum; The case was a boy of eight at Orofino, Idaho. The larva of this bot emerged from a swelling on the boy's head, a little behind the ear and above the neck, leaving the characteristic puncture or hole in the middle of the swelling. The case was reported to me by Dr. Fairly of Orofino, who sent me the bot together with the case history. This was typical in every respect. The boy was brought to the physician's notice in late January, when he complained of axillary pains, stiffness, low fevers, and "shooting pains." The doctor found only a slight swelling at the time, located near the clavicle. This swelling moved upward and around the neck to the back of the head where it seemed to halt and grow larger. The physician suspected a tumor and was preparing to operate in a few days, when the mother noticed the appearance of a perforation in the middle of the swelling, followed by the emergence of the larva. This was in February, about the 14th.

IXODIDAE

Idaho R. A. Muttkowski (April 19): Mummification of a wood tick; one of my students reported to me about three weeks ago that she had been bothered with a peculiar hardening of tissue in her right heel, as though a lump of some sort had formed. There was no definite shape to the lump, except that a small papilla had formed externally with a central opening. The lump had caused

no pain at any time, but it irritated her when walking, as it felt as if she had a foreign body in her shoe. A physician opened the "papilla" a month ago, probing down the "canal" and finally took from it an adult wood tick (the spotted fever type), which was quite hard and completely mummified. With the cause of "the lump" thus removed, the physician deemed further operation unnecessary. A week ago the same student told me that the lump was rapidly disappearing and scarcely noticeable when she walked. The time of infection is of interest. The girl could not give me an exact date, but she felt that the parasite had attached itself during April or May last year (1923) since at that time she had gone on frequent picnics to the woods around Moscow. Since then she had not been into the woods. Indeed, she had first noticed the formation of a small lump late last summer, but had not considered it of sufficient importance to consult a physician. Evidently the tick had fastened to her heel and bored its way into the epidermis. Since the heel is much in use, there was a protective hypertrophy of epidermal and subcutaneous tissue to cut off or surround the parasite, thus causing "a lump". Death of the parasite, I imagine, came from the sweat and lack of oxygen. After that the parasite was passive, but the tissue still continued its attempt to isolate the foreign body. The interesting feature of the case is the unusual point of attack; the remainder is merely a repetition of the usual defensive methods of the body against foreign bodies. Students come to me often enough to tell me of wood-tick bites. But these occur most frequently below the knee, in the groin, in the axilla, but especially just below the margin of the shoulder-blade. I have also taken a tick or two from the heads of a boy and a girl.

CATTLE

CANYON HORSE-FLY (Tabanus rubescens Bellardi)

Texas

D. C. Parman (April 21): One specimen of the canyon horse-fly has been observed at the laboratory on April 16. This is a very early date for appearance and is the earliest on record for appearance at the laboratory. None were observed in the canyons on April 19.

SCREWORM (Chrysomya macellaria Fab.)

Texas

D. C. Parman (April 21): The screwworm fly is increasing in numbers and the winter blow-fly is diminishing rapidly, about 50-50 on the first of this month and is about 85 per cent screwworm flies and 15 per cent Phormia regina on April 21. Several cases of worms have appeared on ranches and it will probably be a year of many cases of worms as the adults have appeared in greater numbers at an earlier date than normal.

HORN FLY (Haematobia irritans L.)

Texas D. C. Parman (April 21): The adults of the horn fly have appeared in good numbers (as many as 1,000) on some cattle in all herds on April 10. There has been some increase to date except in a strip of territory in the hailstorm area to the south, where very few adults are observed at present.

POULTRY

CHICKEN MITE (Dermanyssus gallinae Redi)

Texas D. C. Parman (April 21): It is worthy of note that the chicken mite has not been observed at Uvalde this season and it has not been possible to maintain an infestation for experimental work.

FOWL TICK (Argas miniatus Koch)

Texas D. C. Parman (April 21): The fowl tick has appeared in good numbers where they have not been controlled, and some losses have occurred.

DOGS

BITING DOG LOUSE (Trichodectes latus Nitzsch)

Connecticut W. E. Britton (April 11): The first definite record which I have received from this State is from Pomfret, where this pest was attacking a collie.

I N S E C T S I N F E S T I N G H O U S E S A N D P R E M I S E S

CARPENTER ANT (Camponotus herculeanus pennsylvanicus DeG.)

Mississippi M. R. Smith (April 10): Mr. R. P. Colmer recently sent to this office for determination specimens of the carpenter ant, which he stated were infesting the house of a lady at Moss Point. The ants were particularly abundant on preserves and cold ham on which they were feeding.

EUROPEAN EARWIG (Forficula auricularia L.)

Oregon B. B. Fulton (April 4): Most of the eggs had hatched in warm situations at Albany. Pear trees are just beginning to blossom at this time and may serve as an indicator.

AN ANT (Crematogaster laeviuscula Mayr)

Mississippi M. R. Smith (April 3): This species of ant was found infesting a house on the campus at the A. & M. College. The housekeeper states that they are worse on warm days and have been noticed coming in on the pillars from the ground. The ant is fond of greasy foods or sweets. C. laeviuscula is not a common house pest in this locality.



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Errata

The report on outbreak of Laphygma frugiperda in the Fort Valley

Georgia section refers to an undetermined species of Noctuid.

OUTSTANDING ENTOMOLOGICAL FEATURES IN THE UNITED STATES FOR MAY, 1924

The weather over the Eastern and Central States has been very unusual, the spring being very backward and precipitation being much in excess of normal.

Chinch bug development has been materially reduced over the greater part of the belt, but present indications are that serious infestations will cover southwestern, west-central, and central Missouri, eastern Kansas, southern Nebraska, southeastern Iowa, and northeastern, central, and south-central Oklahoma, with possible bad outbreaks in southern Illinois and Indiana.

A serious grasshopper outbreak covers entire east-central Texas and southern Oklahoma.

The Hessian fly infestation is reported as very light in Ohio and Iowa, with conditions about the same as last month in Missouri and Nebraska. In Kansas the conditions resulting in severe damage last fall have been apparently relieved by the dry backward spring which prevailed in this region. In Oklahoma a few counties report serious infestation.

The army cutworm is occurring in a severe outbreak in the Judith River Basin in Montana, and general cutworm damage is reported from the lower Mississippi Valley region and Texas.

Unusual abundance of white grubs and heavy flights of beetles are reported from Iowa, Missouri, and Kansas.

The anomala Anomala orientalis Waterh., which was introduced into Connecticut several years ago and reported in Volumes 1 and 2 of this Bulletin, is apparently increasing. On several lawns at Westville larvae average 60 per square foot. It will be recalled that this pest occasioned much concern among the sugar planters in Hawaii several years ago and was finally controlled by an introduced scoliid wasp.

The corn earworm has destroyed as high as 75 per cent of the early beans in parts of Mississippi.

The Colorado potato beetle is more troublesome than usual over the extreme southern States, reports of serious damage coming from Georgia, Florida, Mississippi, and Texas.

A very remarkable flight of the painted lady butterfly is recorded from California, estimates running into the billions of individuals. This has been followed by a serious outbreak of caterpillars which are attacking garden plants of all kinds.

A very remarkable flight of the painted lady butterfly is recorded from California, estimates running into the billions of individuals. This has been followed by a serious outbreak of caterpillars which are attacking garden plants of all kinds.

The apple aphids in general seem to be very much below normal in abundance in the Eastern States, whereas the apple tent caterpillar is unusually abundant over the New England, Middle Atlantic, and East-Central States.

Pear thrips abundance is much below normal but the pear psylla is seriously abundant in the fruit belt of New York and is also abundant in New England.

A serious outbreak of a heretofore unimportant case-bearer, Coleophora sacramenta Heinrich, has developed on cherry in one locality in California; and a native weevil, Melanomorphus sordidus Horn, has become a serious currant pest in this State.

An aphid, as yet not definitely determined, is attracting considerable attention in Florida as a citrus pest.

An interesting note comes from Porto Rico, where it is found that one of the cotton stainers is attracted in large numbers to pieces of the silk of Ceiba, suggesting a possible remedial measure for the control of this pest.

The practice of using the same land for seed beds of tobacco year after year has resulted in rather serious damage in parts of Tennessee by the larvae of the green June beetle, which seem to be attracted by the litter used to protect these seed beds.

Both the gipsy moth and brown-tail moth seem to be somewhat less numerous over the old infested territory than they were last year.

Two cases of Rocky Mountain spotted fever have occurred in northern Colorado this spring.

OUTSTANDING ENTOMOLOGICAL FEATURES FOR CANADA. FOR MAY, 1924

Stem-mothers of the black cherry aphid occurred in large numbers in April on the opening buds of sweet cherries in the Niagara Peninsula, Ontario, and judging from their numbers in the orchards at present some trouble may be expected.

The European red mite is widely distributed in Nova Scotia. It has been noted from time to time in the past in various parts of the Annapolis Valley, N. S.

The raspberry cane maggot, Phorbia rubivora Coq., continues to be a pest of considerable importance to logan berries and raspberries at Victoria, B. C. Adults commenced to emerge on March 22 this year, the earliest date on record.

The rose scale, Aulacaspis rosae Bouche, which has occurred in the lower Fraser Valley of British Columbia in raspberry plantations for many years, is now reported as causing considerable alarm among small fruit growers in that locality.

The green apple aphid is more abundant on apple trees this season in southwestern Ontario than it has been for several years.

The leaf miner Gracilaria elotella Busck has been very conspicuous on the young wood of apple trees along the shores of Lake Ontario from Toronto to the Niagara River. The health of the trees, however, apparently has not been affected.

The winter mortality of the cabbage flea-beetle, Phyllotreta albionica Lec., at Agassiz, B. C., has been about 10 per cent, slightly higher than similar records of the past. The winter was decidedly wet, with the spring breaking much earlier than usual.

The overwintering death rate of the European corn borer in eight of the most severely infested fields in the vicinity of Port Stanley, Ontario, was 13.05 per cent as against 6.04 per cent last year.

Tent caterpillar outbreaks are being reported from the interior sections of British Columbia and from several points in southern Saskatchewan. In the humid transitional area between Sicamous and Revelstoke, aspen poplar twigs, 1 foot in length showed 7 to 10 egg masses on them this spring. Caterpillars hatching between April 7 and 12 were, at the end of May, very conspicuous.

An outbreak of the spruce budworm, Tortrix fumiferana Clem., has taken place in the Quetico district of western Ontario. White pine in the same district is being attacked by borers belonging to a species of Monochamus.

CEREAL AND FORAGE - CROP INSECTS

GENERAL FIELDERS

GRASSHOPPERS (Acridiidae)

- Oklahoma E. E. Echoll (May 17): We have just had a request from Carter County for immediate assistance in putting on a grasshopper campaign. The report stated that grasshoppers are present by the millions and are just large enough now to travel and become very destructive. Control work will be started early next week.
- Texas F. L. Thomas (May 21): The most important feature of insect activity is the grasshopper outbreak which is now in the fourth week of its occurrence and covers nearly the entire east-central portion of the State. A great deal of poisoned bait is being distributed in the various counties.
- F. C. Bishopp (May 24): Grasshoppers were reported as appearing in considerable numbers in the bottom lands in Dallas County on May 20. The young hoppers were doing some damage to young cotton, which is markedly later than normal this year.
- Washington E. J. Newcomer (May 20): An outbreak of grasshoppers has been reported in Okanogan County. This is similar to previous outbreaks in that section but may be more serious, owing to increased plantings of fruit trees.

CUTWORMS (Noctuidae)

- Mississippi H. W. Allen (May 23): Nearly full-grown caterpillars are generally distributed on clovers, cabbage, bean, potato, etc., without causing much apparent damage. They are most abundant under heavy growth of clover in damp soil, where 30 or more to a square yard can be readily found.
- Missouri L. Haseman (May 22): Several species are very abundant, though no complaints of serious damage have come in as yet.
- Texas F. C. Bishopp (April 15): Cutworms are causing considerable loss to gardens in Dallas and vicinity, being especially injurious to tomatoes and other plants recently set out.
- Montana W. C. Cooke (May 12): We have reports of a rather severe outbreak of the army cutworm, Chorisaagrotis auxiliaris, in the Judith Basin district in central Montana. Several hundred acres have been affected to date and it has been impossible for us to check up on the abundance of the larvae. The species seem to be about two weeks later this season than usual, which is rather exceptional as the spring season has been slightly earlier than usual.

WHITE GRUBS (Phyllophaga spp.)

- Delaware C. O. Houghton (May 6): An enormous swarm of Phyllophaga tristis Fab. was observed in flight on the evening of May 6 at McClellandsville. Mr. Seidel, the observer, reported that there were millions of them and that they weighted down the raspberry bushes upon which they settled. He said that they could be gathered by the handful anywhere upon a large area of the bushes. No injury was observed, and they were all gone the next morning. (This species is known to feed especially upon oak!)
- Iowa H. E. Jaques (May 9): From all indications Brood A of the white grubs threatens to be fully as serious in its damage in southeastern Iowa this year as it was in 1921. It would seem from the early inquiries and observations that I have made that it may be extending its area of infestation westward. Grubs have been showing up abundantly in the spring plowing.
- Missouri L. Haseman (May 22): White grubs are very abundant and a heavy crop of adult beetles came out the first half of the month.
- Kansas J. W. McColloch (May 20): White grubs have killed out a large area of blue-grass sod in a cemetery at Alma.
- CORRECTION: J. J. Davis (May 24): On page 50, Volume 4, No. 2, of the Insect Pest Survey Bulletin, Lachnosterna arcuata Smith should be Lachnosterna vehemens Horn.

WIREWORMS (Elateridae)

- New Jersey T. J. Headlee (May 1): I am sending some wireworms (Melanotus sp.) which are troublesome in cultivated lands. These lands are in the hands of market gardeners and are more or less constantly under cultivation.
- Nebraska M. H. Swenk (April 20-May 15): In spite of the cool, backward spring wireworms have not been much complained of to date in the earliest planted corn. Such trouble may develop later, however.

WHEAT

HESSIAN FLY (Phytophaga destructor Say)

- Ohio T. H. Parks (May 20): Wheat in the central and southern counties is almost free from the Hessian fly. Only with difficulty could eggs be found. Early sowed wheat in 3 northeastern counties had a medium infestation May 1. Much winterkilling of wheat has occurred except in northwestern counties.
- Iowa Carl J. Drake (May 26): Hessian fly is on the decrease in the State. The campaign of 1923 owes its success to the cooperating farmers who put off drilling until the fly-free date was predicted.

Of the 52 Counties cooperating in 1923 over 90 per cent of the farmers in Adams, Appanoose, Boone, Carroll, Cass, Cedar, Dallas, Des Moines, Fremont, Guthrie, Henry, Jasper, Lucas, Mills, Monroe, Montgomery, Page, Polk, Pottawattamie, Taylor, Wapello, Warren, and Woodbury put off seeding until after the fly-free date was established. The flaxseed count enabled us to predict accurately the fly-free date.

The spring brood of flies began to emerge in the early seeded fields in April. Fred Butcher, Extension Entomologist, is conducting a Hessian fly observation station at Emerson, Mills County, in order to determine the period of emergence of the spring brood. The dry and cold weather this spring killed a large number of flies in the flaxseeds. The larvae pupated successfully but the adults died before breaking through the flaxseeds. The percentage of dead forms is very large but only a small percent of the larvae are parasitized.

Missouri

L. Haseman (May 22): The Hessian fly situation is not materially changed from the earlier report. Most farmers are centering their attention on the chinch bug in wheat, though we will have some Hessian fly damage undoubtedly.

Nebraska

M. H. Swenk (April 20-May 15): During the period covered by this report adults of the Hessian fly have been emerging from the overwintered flaxseeds. Examination of material on May 2 from Dodge County and on May 5 from Saunders County indicated that the great bulk of the flies had not as yet emerged.

Kansas

J. W. McColloch (May 2): This report represents the damage to wheat last fall; 9,761,065 acres were sown to wheat in the fall of 1923 and 633,613 acres, or 6.5 per cent, show fly damage. Of the 633,613 acres showing injury 128,481 acres, or 20.3 per cent, will be a complete failure. (May 21): The Hessian fly has not proved as serious this spring as was anticipated. This is probably due to the dry, cold spring which is holding everything back. The principle damage so far this spring has been reported in the eastern third of the State. No damage has been reported from northwestern Kansas where the fly was so abundant last fall.

Oklahoma

E. E. Scholl (May 17): In the counties of Ottawa and Craig a number of wheat fields show such heavy Hessian fly damage that they will be plowed under and, at the suggestion of the county agent, such crops as cowpeas and soy beans will be planted.

CHINCH BUG (Blissus leucoconterus Say)

Illinois

W. P. Flint: The weather of the past month has been very cool and but little egg laying has taken place. The rainfall has been about normal but on the whole weather conditions have been unfavorable to this insect. They have not been sufficiently adverse to cause any great reduction in the number of chinch bugs in fields.

- Iowa Carl J. Drake (May 28): The chinch bug occurs in alarming numbers in Clarke, Lucas, Monroe, Wapello, Jefferson, Henry, Des Moines, Decatur, Wayne, Appannoose, Davis, Van Buren, and Lee Counties. Most of the adults seem to have passed through the winter successfully.
- Missouri L. Haseman (May 22): Chinch bugs are particularly serious throughout southwest, west-central, and central Missouri. A conference called for the 24th at Kansas City will deal largely with our summer program in this and surrounding States for chinch bug control. If the weather continues favorable we are certain to have a big summer chinch bug problem.
- Nebraska M. H. Swenk (April 20-May 15): During the second week in May the chinch bug was reported as having put in an appearance in abundance in the small grain fields of Pawnee and southern Gage Counties.
- Kansas J. W. McCulloch (May 21): Chinch bugs are now abundant in fields of small grain in the eastern half of Kansas. Some farmers report crops being severely injured. The weather has been very dry and temperatures much below normal.
- Oklahoma E. E. Scholl (May 17): Chinch bugs are now beginning to do a great deal of damage in the northeastern part of the State and are just beginning to get active in the south-central part also. A number of chinch bug eggs were found but the hatching is very slow on account of the cold weather.

WHEAT STRAWWORM (Hamolita grandis Riley)

- Kansas J. W. McCulloch (May 16): A sample of wheat from Colby was examined today which had 15 per cent of the tillers infested.

GREAT-PLAINS FALSE WIREWORM (Eleodes opaca Say)

- South Dakota H. C. Severin (May 14): Our spring has been extremely late and, therefore, the injury by Eleodes, probably E. opaca, will continue for several weeks at Groton.

LEAFHOPPERS (Jassidae)

- Texas F. C. Bishopp: During the latter part of March and the first half of April leafhoppers were reported from several localities in Dallas and Collin Counties as damaging winter grains. In some fields the nymphs are present in great swarms and all plants are showing the effect of their attack, many being completely killed. Some farmers plowed up their grain, fearing that it would not make a satisfactory crop.

CORN

CORN EARWORM (Heliothis obsoleta Fab.)

- Georgia O. I. Snapp (May 13): The first adult of the season was captured in the field at Fort Valley today.

ARMYWORM (Cirphis uniburda Haw.)

- Virginia Herbert Spencer (May 27): There is a pronounced outbreak of armyworms in the Norfolk section, with considerable damage to alfalfa and corn. There have been many calls for assistance at the Virginia Truck Experiment Station.
- Indiana J. J. Davis (May 24): The first adults were observed at Lafayette May 7. We have observed them rather frequently at lights during the month.
- Illinois W. F. Flint: Adults of this species are abundant in central and southern Illinois. They have been on the wing every night for more than a month when the temperature has been sufficiently high to promote insect activity.

FALL ARMYWORM (Laphygma frugiperda S. & A.)

- Louisiana T. E. Holloway and W. F. Haley (May 15): A field of young corn near New Orleans was noted in which practically every plant was more or less injured by this insect. Moths as well as larvae of various sizes were present.

FALSE CHINCH-BUG (Nysius ericae Schill.)

- Arizona V. L. Wildermuth through Geo. A. Dean: There has been a rather serious outbreak of the false chinch-bug in the Salt River Valley during the past two weeks. These bugs have been injuring a great variety of cultivated crops which happen to be growing adjoining waste places where they were able to breed up in considerable numbers upon various weeds, the chief of which was probably wild mustard. The crops damaged have been corn, cotton, and garden varieties.

BILLBUGS (Sphenophorus spp.)

- Georgia D. K. Young (April 19): Sphenophorus callosus Oliv. is reported as doing severe damage in a few cornfields at Camilla. This is the first report of the season.
- Missouri L. Haseman (May 22): Corn billbugs are reported from west-central Missouri as abundant.

ALFALFA AND CLOVER

PEA APHID (Illinoia pisi Kalt.)

- Wisconsin J. E. Dudley, Jr. (May 24): There appears to be a more general infestation of both aphids and natural enemies than last year. In one or two fields coccinellids are particularly numerous. Clover and alfalfa are being attacked in Columbia County.

Kansas J. W. McCulloch (May 2): Pea aphids are severe on a 15-acre field of alfalfa in Lincoln County.

MARCH FLIES (Bibio sp.)

Ohio H. A. Gossard (May 20): On May 9 Bibio albinennis was received from Celina and on May 25 larvae of some Bibio, probably this species, were sent us from Euobard, the larvae having been found in the vegetable garden, where they were probably feeding on manure.

Nebraska M. H. Swenk (April 20-May 15): In Buffalo County injury to alfalfa roots by the larvae of March flies, Bibionidae, was reported during the last week in April.

CLOVER-LEAF WEEVIL (Hypera punctata Fab.)

Indiana J. J. Davis (May 24): A few inquiries and reports of abundance were received early in May for the southern end of the State, but fewer than usual.

LESSER CLOVER-LEAF WEEVIL (Phytonomus nigrirostris Fab.)

Ohio T. H. Parks (May 20): Newly hatched larvae are now abundant in the buds under leaf stipules of red clover at Columbus. The insect promises to continue as the most serious pest of red clover in western Ohio.

GRASS

GREEN JUNE BEETLE (Cotinis nitida L.)

Indiana J. J. Davis (May 24): Cotinis nitida grubs have been reported as annoying in lawns and plant beds at Maryville April 15 and Terre Haute May 3.

ANOMALA (Anomala orientalis Waterh.)

Connecticut Philip Garman (May 22): At Westville, New Haven County, several lawns contain 60 or more grubs per square foot. They are increasing in numbers.

SIX-SPOTTED LEAFHOPPER (Cicadula 6-notata Fau.)

Iowa C. N. Ainslie (May 20): I never have seen this species so numerous as it is this spring. At Sioux City these jassids fly in swarms as one crosses on the lawn or jars almost any plant or shrub.

TRUCK - CROP INSECTS

POTATO AND TOMATO

COLORADO POTATO BEETLE (Leptinotarsa decemlineata Say)

- Georgia O. I. Snapp (May 10): The potato beetle has been playing havoc in some gardens in Fort Valley, while in others scarcely an individual can be found.
- Florida F. S. Chamoerlin (May 8): The potato bug is more numerous and is doing more damage in Greenville section than is usually the case.
- Mississippi H. W. Allen (May 23): Wherever spraying has not been undertaken heavy damage has been caused to potatoes, to the extent of total defoliation in many cases. In one patch of tomatoes, in Oktibbeha County, of about one-tenth acre, defoliation of the newly set plants by adults was moderate to heavy and resulted in destruction of some plants.
- Texas F. C. Bishopp (April 15): Adult potato beetles were appearing in considerable numbers. (April 18): Some spraying of potatoes with arsenicals is being done. (April 22): Where spraying had not been done the first brood of potato beetle larvae is doing serious damage.

POTATO FLEA-BEETLE (Epitrix cucumeris Harr.)

- South Carolina J. A. Berly (May 12): Flea-beetles have been very abundant on tomato and potato plants in the gardens at Clemson College.

SEED-CORN MAGGOT (Hylemyia cilicrura Rond.)

- North Carolina Franklin Sherman (May 26): As in the past several years there were reports of local damage from several coastwise counties during April and early May, but none have been received recently.

CABBAGE

CABBAGE MAGGOT (Hylemyia brassicae Bouche¹)

- New York L. C. Tyler (May 3): Flies were observed on April 29 in Nassau County and are now depositing eggs.
- H. B. Davis (May 2-3): Maggot flies were observed in some of the fields of early cabbage in Suffolk County.
- Indiana J. J. Davis (May 24): The cabbage and radish maggot was reported first this spring on radishes from Fort Wayne May 19. The maggots were small in all cases.

STRAWBERRY

STRAWBERRY LEAF-BEETLE (Paria canella Fab.)

New York C. C. Wagoner (May 4): Adults were found feeding on strawberry foliage in Ulster County.

ASPARAGUS BEETLE (Oriocoris asparagi L.)

Massachusetts A. I. Bourne (May 23): As yet no specimens of either species of asparagus beetle have been discovered.

Delaware C. O. Houghton (May 2): At Newark beetles are just beginning to appear.

Maryland J. A. Hyslop (May 16): The common asparagus beetle is now present in large numbers on seeding asparagus plants at Annapolis. Beetles are also doing some damage to sprouted tips in producing beds. Egg laying is well under way.

Oregon Don C. Mote (April 22): At Woodburn the beetles are fairly abundant in 1 acre along the edge of field of 3 acres of asparagus. Eggs are being deposited. (May 8): The beetles are attacking asparagus at Corvallis.

BEANS

MEXICAN BEAN BEETLE (Eolichna cornuta Muls.)

Georgia O. C. Boyd (April 23): This is the first report of this pest sent to this office. General infestation reported medium on snap oush beans at Thomasville.

J. B. Gill (May 23): The first overwintering adult of the Mexican bean beetle was observed on April 16 at Thomasville. On May 2 the first egg mass was seen in the field, this being deposited on the foliage of snap beans. Thus far no serious damage to beans has been observed or reported from this section.

BEAN LEAF-BEETLE (Cerotoma trifurcata Foerst.)

South Carolina J. A. Berly (May 12): This pest has been very abundant this spring on young snap beans at Clemson College.

Georgia O. C. Boyd (April 23): This is the first report this year being sent to the Atlanta office. The general infestation is reported as medium.

Ohio H. A. Gossard (May 20): Cerotoma trifurcata were taken at Gallipolis on Tennessee green-pod beans, where they were doing serious damage.

Mississippi H. W. Allen (May 23): Young bean plants were heavily attacked by adult beetles in several small patches of string beans in the locality of A. & M. College at the end of April and the beginning of May. About one beetle to every leaf; defoliation about 25 per cent, growth retarded. Beetles are now fewer in numbers and the damage is being rapidly repaired.

CORN EARWORM (Heliothis obsoleta Fab.)

Mississippi R. P. Colmer (May 16): The beans in some fields at Pascagoula average a loss of 75 per cent. Tomatoes are not damaged badly.

PEAS

PEA APHID (Illinoia pisi Kalt.)

Delaware J. F. Adams (May 20): Aphids were observed at Seaford April 30. At the present time, 3 weeks later, they have apparently increased but little in numbers. The cold, wet weather has undoubtedly been an important factor.

Utah Geo. F. Knowlton (May 27): Indications are that this will be a serious pest in Cache County this year. Last year they destroyed most of the sweet peas that were being raised for seed purposes.

CUCUMBERS

STRIPED CUCUMBER BEETLE (Diabrotica vittata Fab.)

Massachusetts A. I. Bourne (May 23): A report by Prof. Koon of injury by the cucumber beetle to cucumbers in greenhouses in Baldwinsville, which is in northern Worcester County, is received. The particular damage is caused by the wilt following the attacks of the beetles. It appears that squashes and cucumbers were grown near the house last year, and in all probability the beetles hibernated in the greenhouses and were then at hand to attack the young cucumbers early in April. His estimate of the losses due to the wilt was 25 per cent of the crop.

Mississippi J. E. McEvilly (May 7): Seedling plants have been attacked by the larvae of this pest at Summit. Adults are appearing in great numbers. Nicotine dusting and spraying are being practiced.

H. W. Allen (May 23): In two home gardens 3 miles apart in Oktibbeha County no adults have been seen. In one containing squash, cucumber, and cantaloupe, in which a very heavy infestation developed last season, not a single beetle has been found this season though the plants have been present more than a month.

TWELVE-SPOTTED CUCUMBER BEETLE (Diabrotica 12-punctata Oliv.)

Georgia J. D. More (March 17): Plants are young. Injury is moderately severe on Johnson beans at Valdosta.

Louisiana J. W. Ingram (May 9): Many gardens at Crowley have suffered serious injury from the attack of the adult of this beetle. They are present in unusually large numbers in this section this year on beans and other garden plants.

COMMON RED SPIDER (Tetranychus telarius L.)

Massachusetts A. I. Bourne (May 23): The common red spider on cucumbers has been reported as doing considerable damage in certain of the greenhouses in the Market Garden district around Boston. Specific estimate of damage to one house in Mansfield places the figure at 25 per cent of the crop. In another house in Woburn this insect is credited with causing approximately a 10 per cent loss.

ROOT-KNOT NEMATODE (Heterodera radicicola Greef-Mueller)

Massachusetts A. I. Bourne (May 23): The root-knot nematode has been reported to this office by Prof. Koon, in charge of the Market Garden Field Station, who has found it to be rather prevalent in greenhouses throughout the suburban districts of Boston. A conservative estimate places the damage to cucumbers at from 5 to 10 per cent, in different ranges.

RHUBARB

A DOCK BEETLE (Gastroidea caesia Rogers)

Oregon Don C. Mote (April 18): This insect is reported as doing considerable damage to leaves of rhubarb near Corvallis, eating holes in the leaves. The beetle is quite common now on dock.

MISCELLANEOUS FEEDERS

BUMBLE FLOWER BEETLE (Euphoria inda L.)

Ohio H. A. Gossard (May 20): Euphoria inda, taken alive at Niles, was sent to us and May 11 a beetle of the same insect, taken alive, was received from Gates Mill where it was found in a vegetable garden.

A FALSE WIREWORM (Eleodes tricolorata Say)

Texas F. C. Bishopp: These beetle larvae were found to be destroying plants and gardens to a considerable extent. Young beets, radishes, kohlrabi, and tomatoes were being cut off by them.

SOWBUGS (Crustacea)

Texas F. C. Bishopp (April 25): These crustaceans are extremely abundant in flower and vegetable gardens, especially in low ground. They are causing considerable damage to seedlings of flowers and vegetables at Dallas and vicinity.

CLAY-BACKED CUTWORM (Feltia gladiaria Morr.)

Ohio

H. A. Gossard (May 20): May 16 cutworms of the species Feltia gladiaria were received from South Euclid, where they were doing heavy damage in hotbeds.

PAINTED LADY BUTTERFLY (Vanessa cardui L.)

California

E. A. McGregor: Continuing from April 11 to 13, inclusive, there was a remarkable migration of this butterfly. All through the day there was a continual flight of these insects. Roughly it was estimated that there were an average of about 300 butterflies per acre at a given moment. The flight direction appeared to be from the southeast to the northwest, and it would seem that the source of the migration was either the foothills of the Sierras or the Sierras proper.

In travelling, the flight was not characteristic of butterflies in general, but was of a more steady and purposeful nature. During calm intervals the flight took place on an average of perhaps 10 or 20 feet altitude, but during periods of windiness the butterflies flew very close to the ground. There appeared to be no attempt toward pairing and the individuals flew well separated -- possibly 10 feet apart on an average. It was very noticeable that they all pursued their flight in the same direction. It was rarely that individuals were seen to alight on vegetation, but this they did at times.

The above flight occurred during the warmest period yet experienced this season, temperature maximums ranging from 80 to 88° F. The temperature suddenly dropped late on the afternoon of the 13th, accompanied by a chilly wind, and the flight as suddenly terminated. On the 15th the temperature rose again but a gusty wind occurred so that only a very few individuals could be seen migrating.

An attempt to estimate the number of individuals comprising this 3-day migration is here presented. The flight was established to be equally dense at Sunland, Porterville, Strathmore, Lindsay, Exeter, Visalia, Woodlake, and Lemon Cove. This shows the flight to have been at least 40 miles in width (it no doubt was much wider). The daily duration of the migration was at least 12 hours, or a total for the three days of 36 flight hours for any given point.

Now the rate of travel was estimated at about 12 miles per hour, which would give to the flight a total dispersion length of 432 miles for the 3 days. Within such a zone (40 miles wide by 432 miles long) is contained about 17,280 square miles or 11,059,200 acres. With an estimated occurrence of about 300 butterflies per acre, it is readily computed that at least 3,000,000,000 had passed in the 40-mile-wide zone between Sunland and Lemon Cove.

If more data were available regarding the width of the flight, it undoubtedly could be shown that the population of this interesting migratory flight much exceeded the above estimate.

R. E. Campbell (May 10): Following an extended and heavy northerly flight of the painted lady butterfly the hairy caterpillars began to appear on weeds, mostly malva, thistle, and nettles. As these

were considered, dried, or were plowed up, the caterpillars began to migrate to other vegetation, including garden plants of all kinds, but particularly lettuce, radishes, potatoes, and beets, as well as some flowers. In some cases following the plowing of orchards, the foliage of young orange trees was attacked. At one place in Ventura County the caterpillars were so numerous that they assumed the armyworm habit, and thousands began migrating, necessitating the construction of trench barriers to protect near-by crops. Great quantities of worms were killed by running an automobile with the wheels on one side in the bottom of the furrow.

The flight and succeeding infestation covered the entire area of southern California as far north as San Luis Obispo. Newspapers carried reports of flights so heavy that motorists were compelled to stop their cars and brush the butterflies off their radiators.

FRUIT INSECTS

APPLE

SNOW-WHITE LINDEN MOTH (Ennomos subsignarius Hbn.)

- Indiana H. F. Dietz (May 23): The eggs of the snow-white linden moth started hatching about May 5. However, during the cold spell the caterpillars do not look normal. They appear to be starved and many of them have not been able to move out to the leaves. Just what effect this will have on the expected outbreak of this insect for the coming season I do not know.
- J. J. Davis (May 24): Eggs of the snow-white linden moth on apple were received from Portland on April 11.

APHIDIDAE

- Massachusetts A. I. Bourne (May 23): Apple aphids are considerably less abundant than normally.
- Pennsylvania S. W. Frost (May 19): The rosy, green, and grain aphids do not appear to be numerous this season on apple.
- Michigan R. H. Pettit (May 14): Plant-lice are appearing in the orchards, the eggs having mostly hatched by this time, in the southern part of the State at least.

GREEN APPLE APHID (Aphis pomi DeG.)

- Connecticut M. P. Zappe (May 22): Quite a number of aphids hatched but practically all of them have died in the vicinity of Milford, New Haven, Hamden, and Cheshire.
- Mississippi H. W. Allen (May 23): Young shoots of both the young and the bearing trees heavily stocked, leaves curling, growth retarded. Report based on examination of about 7 acres of orchard.

Utah George F. Knowlton (May 6): Aphis pomi DeG. are very numerous in many apple orchards in Cache Valley, notwithstanding the cold weather on April 25 and 26, which destroyed many nymphs, and shriveled up a large percentage of the eggs.

APPLE-GRAIN APHID (Rhopalosiphum prunifoliae Fitch)

New York G. E. R. Harvey (April 19): They have been hatching for the past week in Dutchess County and are now clustered on the opening buds.

Ohio H. A. Gossard (May 20): Aphis avenae hatched very plentifully around Wooster but was not abnormally plentiful and has caused no marked damage. The species is still present on apple but migrants are now developing, a few having acquired wings, and this species will probably not increase in numbers upon apple.

T. H. Parks (May 20): This is the only species of aphid that can be found on apple in central Ohio. It is not very abundant. Aphis pomi and Aphis sorbi are very scarce.

ROSY APPLE APHID (Anuraaphis roseus Baker)

New York C. R. Crosby and assistants: In Dutchess County this insect was present in appreciable numbers. (April 26): Plenty of them were observed in Columbia County. (May 3): Abundant at Sodus on this date, while in Ulster County on May 10 they were observed in the curling leaves at this date.

Delaware J. F. Adams (May 15): Numerous at several places in South Delaware.

Maryland E. N. Cory (May 14): Generally delayed dormant sprays and the cluster sprays with nicotine have reduced the number of aphids in most orchards. However, they are gradually increasing and may be a serious factor. Distribution seems general.

Ohio H. A. Gossard (May 20): The rosy apple aphid is scarce about Wooster but it is quite plentiful in southern Ohio at Gallipolis and through that section.

Illinois W. P. Flint: This insect is not nearly as abundant as in 1923. Thus far, no cases have been found or reported where the infestation was sufficiently heavy to cause any commercial damage.

WOOLLY APPLE APHID (Eriosoma lanigerum Hausman)

Utah George F. Knowlton (May 6): Eriosoma lanigerum are again numerous enough to do damage in some orchards in this county, adults and half-grown nymphs being found in large numbers in places where the bark has been damaged.

CODLING MOTH (Carpocapsa pomonella L.)

- Massachusetts A. I. Bourne (May 24): Codling moth adults are just emerging on this date.
- Georgia O. I. Snapp (May 5): First adult moth of the season emerged here today at Fort Valley.
- Washington E. J. Newcomer (May 20): Unseasonably warm weather for the past two weeks has brought the codling moths out unusually early and in large numbers. The first moths were observed May 6 and the maximum emergence is past at this date. This bunching of the moths should make control easier than in years when cold weather delays the emergence. The first brood will doubtless be larger than usual, as the warm weather will result in more eggs being deposited. At this date a few larvae are hatching.

FRUIT-TREE LEAF-ROLLER (Cacoccia argyrospila Walk.)

- New York C. R. Crosby and assistants: Egg masses were quite abundant in Orleans County on April 28, while in this County on May 3 eggs were unusually abundant in some orchards. Eggs abundant on one orchard in Oswego County on May 3.

BUDWORM MOTH (Tmetocera ocellana D. & S.)

- New York E. P. Felt (May 26): The budworm is somewhat prevalent in apple orchards in Dutchess County.

CIGAR CASE-BEARER (Coleophora fletcherella Fernald)

- New York D. D. Ward (May 3): Not so abundant in sprayed orchards in Onondaga County as it was two years ago.

PISTOL CASE-BEARER (Coleophora malivorella Riley)

- New York H. W. Fitch (April 26): Threaten to be very injurious again this season in a young Rome Beauty orchard in Wayne County. (May 7): In Monroe County this insect was found on the buds of apple.

TENT CATERPILLAR (Malacosoma americana Fab.)

- Massachusetts A. I. Bourne (May 23): This pest is still rampant and shows no indications of any let-up. Reports from the eastern section of the State and our observations over the central counties show the pest to be much more seriously abundant than last year. In fact, in Worcester County and parts of Middlesex County practically every wild cherry has one or two tents. Reports from the extreme western counties indicate that the pest is not unusually abundant there.
- Connecticut W. E. Britton (May 16): Apple and cherry along the roadside covered with nests. On May 21 observed thousands of nests in towns of Greenwich, Stamford, Norwalk, Westport, Fairfield, Bridgeport, and Stratford.

New York

C. R. Crosby and assistants: Tent caterpillars seem to be abundant over the eastern and southeastern part of New York State this year, heavy infestations being reported from Westchester, Gre Rockland, and Dutchess Counties. In the last county hatching began on April 13.

E. P. Felt (May 26): The apple tent caterpillar is somewhat abundant in Rensselaer and Columbia Counties, very abundant in Dutchess County, and reported as much more numerous than usual in the vicinity of New York City.

Maryland

E. N. Cory (May 14): Many cherry trees already stripped. Webs conspicuous in every county; distribution seems general.

Ohio

H. A. Gossard (May 20): A letter from Patriot, Gallia County, Ohio indicates that there is a local outbreak of considerable magnitude of the apple tent caterpillar at that point. I have not had specimens of the insects and merely judge from the contents of the letter that the insect must be the apple tent caterpillar.

Illinois

W. P. Flint (May 14): The apple tent caterpillar has been much more abundant than usual in the extreme southern part of Illinois. The caterpillars were nearly full grown on May 14. There has been no damage to sprayed orchards, most of the injury from the insect occurring on plum, cherry, and apple in woodlands and unsprayed farm orchards.

Nebraska

M. H. Swenk (April 20-May 15): Injury to plum trees by the apple tent caterpillar is beginning to develop in the northeastern corner of the State.

SPRING CANKERWORM (Paleacrita vernata Peck)

Maine

E. M. Patch (May 23): At Monmouth this insect is reported as being about 6 mm. long at present.

New York

G. E. R. Hervey (May 7): Larvae were observed in Dutchess County for the first time.

TUSsock MOTH (Hemerocampa leucostigma S. & A.)

Indiana

J. J. Davis (May 24): During the past month three inquiries from widely separated localities were received about the tussock moth on apple. Each inquiry was accompanied by egg masses collected on apple. These are unusual for Indiana as we receive few inquiries about this insect in apple orchards.

APPLE RED BUG (Heterocordylus malinus Reut.)

Massachusetts

A. I. Bourne (May 23): The apple red bug is about as abundant as last year. It began to make its appearance during the first week of the month in this region.

APPLE LEAFHOPPER (Empoasca mali LeB.)

Massachusetts A. I. Bourne (May 23): Our attention was called to the apple leafhopper in the orchards just south of Amherst, where last year the infestation was very heavy. A visit to these orchards on the 22d indicated that there was a probability of a very severe infestation this season. Where nicotine had not as yet been used in any of the sprays, it was very common to find 10 or a dozen nymphs of the hoppers to a leaf; in some cases as many as 30 or 40. These small leaves, scarcely an inch in width, were already beginning to show the silvered stippling which results from the feeding of these insects.

New York A. B. Buchholz (May 10): Many leafhopper eggs have been observed on apple.

Maryland E. N. Cory (May 14): The largest and earliest outbreak of apple leafhoppers I have ever noticed is now in progress. They are mostly in very early instars in the locality of Brooklyn. (May 17): From 2 to 15 first and second instar nymphs present on nearly every leaf on the lower portion of the tree at Smithsburg.

Ohio T. H. Parks (May 20): Newly hatched leafhoppers are becoming common on the apple foliage. Bloom fall occurred one week ago (May 13):

SAN JOSE SCALE (Aspidiotus perniciosus Comst.)

Massachusetts A. I. Bourne (May 23): Although reports vary from individual orchards, yet careful observers are beginning to be convinced that the scale is gradually gaining in abundance.

The county agent for Franklin County reported that the San Jose scale is more prevalent throughout that general section than he has seen it for several years.

New York C. R. Crosby and assistants: Reports from the eastern part of the State and from the fruit belt of the western part of the State indicate that the San Jose scale is moderately abundant throughout the State, though not serious in well-cared-for orchards.

North Carolina Franklin Sherman (May 26): Beginning with 1915 the complaints were far less than they had been previously and this continued to the extent that from 1918 to 1923 the complaints were very few. Even at present it is still at low ebb in number of complaints; but some of the reports received, and field consultations and inspections also, indicate that the San Jose scale is staging somewhat of a "come-back"; not so severe perhaps as seems to be indicated in some other States, but noticeable.

Ohio H. A. Gossard (May 20): The San Jose scale was received on March 21 from Forest on apple; (March 19): From Haydenville on peach. (April 1): From Fredericksburg on fruit trees and from West Liberty on apple. (April 3): From Akron on apple.

Wisconsin E. L. Chambers (May 15): New infestations of the San Jose scale have been found recently in Racine, Kenosha, and Ozaukee Counties not previously reported. They are as follows: Cedarburg in Ozaukee County; North Cape, Waterford, Burlington, and South Racine in Racine County; Salem in Kenosha County.

Washington E. J. Newcomer (May 20): The San Jose scale was much more numerous on apples and pears last fall than for many years. As a result, the dormant spray was more generally and more carefully applied this spring than usual. The use of oil sprays was quite general, about 15 cars of oil and prepared oil sprays being sold in the Yakima Valley.

OYSTER-SHELL SCALE (Lepidosaphes ulmi L.)

Massachusetts A. I. Bourne (May 23): The oyster-shell scale is another species along with the San Jose which has here and there been returning to abundance enough to be causing local injury.

New York K. E. Paine (April 26): A considerable amount of infestation has been observed this year in Chautauqua County.

Indiana H. F. Dietz (May 23): The eggs of the oyster-shell scale, all found have not yet begun to hatch.

SCURFY SCALE (Chionaspis furfura Fitch)

New York K. E. Paine (April 26): In Chautauqua County a few trees are abundantly infested.

Ohio H. A. Gossard (May 20): On April 1 this insect was received from West Liberty on apple.

TREEHOPPERS

Washington E. J. Newcomer (May 20): Stictoccephala pacifica Van Duzee is apparently much commoner than last year. It has been increasing rapidly, as no injury can be found that was made more than three years ago, and at present it is found in almost all orchards. Ceresa borealis Fairm. is also common, though it was not noted last year.

ROUNDHEADED APPLE-TREE BORER (Saperda candida Fab.)

Ohio T. H. Parks (May 20): This insect is calling itself to the attention of fruit growers in Vinton County. Complaints of damage have been received.

NEW YORK VEEVIL (Ithycerus noveboracensis Forst.)

Illinois W. P. Flint: Adults of this beetle were quite abundant in western Illinois and have caused considerable damage in young orchards. Adults first appeared on May 2 in orchards 35 miles north of St. Louis.

APPLE FLEA-WEEVIL (Orchestes pallicornis Say)

Michigan R. H. Pettit (May 14): I visited the Scudder orchards at Augusta, Mich., on Sunday and examined 140 Spy trees which had recently been sprayed for the apple flea-weevil. Mr. Shutts, the man in direct charge of this orchard, tells me he sprayed on Friday, at which time there were about five flea-beetles to each bud, with arsenate of lead, 2 pounds to 50 gallons of water, using 300 pounds pressure and a gun which distributed the spray liberally. His success was very great indeed. On Sunday when we examined these trees there were very few beetles present; enough of course to require another spray, perhaps more after a time, but over 99 per cent certainly must have been killed. The flea-weevil in this orchard confines its work almost altogether to Spies. Other varieties close by were hardly touched, except as the beetles were driven out of the Spies by the spray.

IMBRICATED SNOOT-BEETLE (Epicaerus imbricatus Say)

Missouri L. Haseman (May 22): The imbricated snout-beetles are always more or less abundant in Missouri, but attracting particular attention at this time on young fruits in northwestern Missouri counties.

EUROPEAN RED-MITE (Paratetranychus pilosus C. & F.)

Massachusetts A. I. Bourne (May 23): Began hatching on the 7th and 8th of May. Contrasted with last year, the hatching was rather long drawn out, occurring over a period of nearly two weeks. Last year practically the complete hatch took place within a matter of three or four days. One of our correspondents from Plymouth County states that one tree in Brockton had its small branches so reddened by the overwintering eggs as to be noticed from the street 100 feet or so away.

Washington E. J. Newcomer (May 20): The European red-mite is commoner and more widespread than last year. In orchards sprayed with dormant lime-sulphur, as high as 200 individuals per leaf were observed on May 1 on the oldest leaves of apple and pear, a condition not noted last year. Orchards sprayed with dormant oil sprays are not badly infested. Winter eggs hatched about April 15. At this date oviposition by the first brood of adults is about over. The eggs from this brood began hatching May 13 and on account of the warm weather a few second-brood adults are present now.

PEAR

PEAR THRIPS (Taeniothrips inconsequens Uzel)

New York C. R. Crosby and assistants: The pear thrips over the eastern part of the fruit belt is reported as generally below normal in abundance, except for reports of considerable injury in a few orchards in Greene County, despite the backward season.

COTTONY MAPLE SCALE (Pulvinaria vitis L.)

Washington E. J. Newcomer (May 20): The cottony maple scale has been found in several orchards of Winter Nelis pears. It also attacks the Anjou, but does not thrive on the Bartlett. It succumbs readily to lubricating oil emulsions.

PEAR PSYLLA (Psylla pyricola Foerst.)

Massachusetts A. I. Bourne (May 23): Pear psylla eggs began to be noted during the very last days of April, and about the first of May practically all of our pear blocks here at the college were being quite heavily infested with eggs of this species. It was possible, in many cases to count as many as 50 or 60 eggs to a short fruit spur. The hatching of the nymphs began the 10th of the month. This was somewhat later in the eastern part of the State, and an approximate figure would be around the 12th to 15th. The insect was rather more abundant than last year.

New York P. J. Parrott (May 5): Oviposition of this insect is the heaviest ever seen in the locality of Geneva.

C. R. Crosby and assistants: The pear psylla is reported as abnormally abundant from practically the entire apple growing section of the State, extending from Genesee to Oswego Counties and southward to Long Island. In some orchards in Monroe County as high as 20 to 30 eggs were found on practically every spur. The belt of heaviest infestation seems to be in Monroe, Ontario, and Yates Counties. Egg laying was well under way in the southern part of the State the first week in May, and in the northwestern part of the State the second week.

Delaware J. F. Adams (May 15): Very numerous at Dover and apparently causing considerable injury.

PEAR-LEAF BLISTER-MITE (Eriophyes pyri Pgst.)

Ohio H. A. Gossard (May 14): The pear-leaf blister-mite was received from Litchfield on pear leaves.

Oregon Don C. Mote (May 2): Reported from Kerry, Columbia County, attacking pear leaves.

PEACH

AMERICAN SNOUT-BEETLE (Epicaerus imbricatus Say)

Georgia C. P. Nelson (April 16): Damage slight in the vicinity of Calhoun, first report of season from Atlanta, and reported doing slight damage on the same host at Crust, Ga.

NEMATODES

Mississippi J. E. McEvilly (May 8): Thirty-two out of fifty-two peach trees in two-year-old orchard killed by nematodes. Root systems show heavy infestation.

MILLIPEDES

Ohio H. A. Gossard (May 20): On April 28 millipedes, apparently of the family Julidae, were received from Massilon, where they were said to be killing young peach trees by clustering and feeding on the roots. The same millipedes were received May 10 from Carrollton, where they were feeding on garden crops, and on May 15 we received them from the Farm Bureau of Cleveland with no accompanying data.

ORIENTAL FRUIT MOTH (Laspeyresia molesta Busck)

Pennsylvania S. W. Frost (May 19): The oriental fruit moths commenced emerging at Arendtsville, Pa., on May 5. On May 16 the maximum emergence occurred. The first eggs were laid on May 18.

Delaware C. O. Houghton (May 14): A moth, which I have identified as this species, was taken on the evening of May 14 as it was hovering about a small peach tree. This is the first I have seen of this species here, but I now believe that considerable of the injury to peach terminals last year, and which was attributed to *Anarsia*, was really by this species.

SAN JOSE SCALE (Aspidiotus perniciosus Comst.)

Georgia Oliver I. Snapp (May 16): Cold weather and spraying killed out the full-grown individuals last winter. The few half-grown scales which did survive the winter have not yet reached maturity, and consequently no breeding has taken place yet this year. The San Jose scale infestation in Georgia this year is the lightest that I have seen for years.

Mississippi J. E. McEvilly (May 8): This pest is prevalent in old orchards in this section. Control and clean-up measures practiced in certain localities.

AMERICAN GRASSHOPPER (Schistocerca americana Drury)

Georgia Wm. F. Turner (May 10): On many trees from 50 to 75 per cent of the peaches are scarred from grasshopper feeding, severe enough so that most of them will have to go into the cull pile at harvest time. A 500-acre field close by has been "lying out" for 2 years. Would offer an excellent breeding place.

APHIDIDAE

South Carolina J. C. Berley (May 12): Aphids have been very abundant on shrubbery, peach, and plum.

GREEN PEACH APHID (Myzus persicae Sulz.)

Maryland E. N. Cory (May 10): General distribution throughout 2,000-tree orchard at Hancock. Pink stem-mothers scarce. (May 17): At Smithsburg there is a light infestation.

PEACH-TWIG MOTH (Anarsia lineatella Zell.)

Texas F. C. Bishopp (April 15): The peach-twig moth is abundant on most peach trees at this time. In some instances dozens of the terminal twigs are dying as a result of their attack. (April 20): Most of the larvae appear to be full grown and active work has largely ceased.

PEACH BORER (Aegeria exitiosa Say)

Georgia Oliver I. Snapp (May 15): Due in all probability to the large amount of paradichlorobenzene used in Georgia during the last three years the general peach borer infestation has been greatly reduced in the State.

SHOT-HOLE BORER (Scolytus rugulosus Ratz.)

Georgia Oliver I. Snapp (May 16): Winter injury has killed or devitalized some peach trees in all parts of the peach belt this year, and now orchard bark-beetles are to be found in many of these trees.

PLUM CURCULIO (Conotrachelus nenuphar Hbst.)

Georgia W. C. McCarrell (April 22): First specimens sent to my office of this insect on this date attacking peach.

Oliver I. Snapp (May 16): Developments since last report show that the curculio infestation at the present time in the Georgia Peach Belt is apparently lighter than at any time since 1918. The late, cold spring caused the beetles to remain in hibernation later than usual, and consequently they came out in greater numbers during a short period the middle of April than was recorded for any period during the 1923 season; however, the peach "drop" examinations show that in the majority of orchards the curculio infestation at the present time is only about one-half as heavy as it was a year ago, when it was lighter than it has been for years. This remarkable reduction in the infestation has resulted from the vigorous curculio suppression campaign that has been waged in Georgia since 1920.

Mississippi J. E. McEvilly (May 7): Work of this pest is very noticeable in this section. Trees laden with fruit this season severely damaged by punctures of this pest.

CAMBIUM CURCULIO (Conotrachelus anaglypticus Say)

Georgia Oliver I. Snapp (May 10): This species of curculio is apparently more common in Georgia peach orchards this year than usual. Some mornings while jarring for C. nenuphar 10 per cent of the Conotrachelus captured were anaglypticus.

CHERRY

FRUIT-TREE LEAF-BEETLE (Syneta albida Lec.)

Oregon Don C. Mote (April 29): One or more scars or small cavities chewed out of the side of the small green cherry. This injury is noticed as soon as the shucks fall.

A CASE-BEARER (Coleorhiza sacramento Heinr.)

California Theodore D. Urbahns (April 24): This small case-bearer, after having been present in small numbers for several years, has suddenly developed in destructive numbers and is causing severe defoliation and loss of crop amounting to at least 50 per cent of the fruit in infested orchards of one locality.

CHERRY APHID (Myzus cerasi Fab.)

New York A. B. Buchholz (April 26): In Columbia County these insects are on the sweet-cherry buds in small numbers.

Ohio H. A. Gossard (May 20): The black cherry aphid has been noticed rather numerously on sweet cherry at Wooster, perhaps a majority of the leaves on some trees being curled.

Nebraska M. H. Swenk (April 20-May 15): The black cherry aphid was first reported as present in injurious numbers in Lancaster County on May 15.

PLUM

PLUM CURCULIO (Conotrachelus nenuphar Hbst.)

Massachusetts A. I. Bourne (May 23): Although constant watch has been kept for the appearance of the plum curculio throughout our blocks of plum and apple orchards, particularly those bordering woodland here at the college, no specimens have as yet been found.

Connecticut Philip Garman (May 22): Reported from New Haven County. Apparently much less abundant as compared with an average year.

New York C. C. Wagoner (May 5): In Ulster County an adult was observed on this date.

South Carolina J. A. Berly (May 12): Has appeared very abundantly on plums within the past week or two.

Illinois W. P. Flint: Adults of the plum curculio were taken feeding on apple in Western Illinois on May 8. They are apparently more abundant than usual, considerable damage having been done to fruit within one week of the time the petals fell.

WESTERN SHOT-HOLE BORER (Scolytus rugulosus Ratz.)

Oregon

Don C. Mote (April 29): One prune grower in Salem district report 300 trees out of 1500 infested. An apple grower reports all his 2-year-old apple trees infested. The trees he says are dying. Beetles apparently about ready to emerge from burrows. A few had already emerged. At Albany, April 30, of 2,000 prune trees one-third were infested.

BROWN PLUM APHID (Hysteroneura setariae Thos.)

Georgia

O. I. Snapp (May 7): Very numerous on unsprayed plum trees at Fort Valley.

RASPBERRY

RED-NECKED CANE BORER (Agrilus ruficollis Fab.)

Indiana

J. J. Davis (May 24): The red-necked cane-borer was reported May as injuring raspberry at Evansville.

GRAPE

GRAPE MEALYBUG (Pseudococcus maritimus Ehrh.)

Michigan

R. H. Pettit (May 14): The grape mealybug is very plentiful in the grape belt of Michigan. Strong lime-sulphur killed practically all that were hit but nothing else as yet has seemed to be effective. Unfortunately the season is advancing so that strong lime-sulphur can no longer be used.

GRAPE LEAFHOPPER (Erythroneura comes Say)

New York

K. E. Paine (April 26): Does not seem to be so very numerous in some vineyards where this pest was very serious last year. Practically none can be found in Chautauqua County.

GRAPE FLEA-BEETLE (Haltica chalybea Ill.)

Pennsylvania

S. W. Frost (May 19): On May 5 adults were found abundant mating on grape.

Delaware

C. O. Houghton (May 2): These beetles are just beginning to appear and are quite numerous for Newark, where but few grapes are grown.

Indiana

J. J. Davis (May 24): The grape-vine flea-beetle injuring buds at Mishawaka May 12.

Kansas

J. W. McColloch (May 1): Adults were feeding on opening buds and doing considerable damage.

Nebraska M. H. Swenk (April 20-May 15): In the vineyards of Johnson and Otoe Counties there developed between May 6 and May 13 a considerable infestation with the grape-vine flea-beetle. By May 15 similar injuries were being reported from Douglas County. According to the reports, rather serious injury is taking place.

CURRENT

A WEBVIL (Melanomphus sordidus Horn)

California E. O. Essig (April 29): Stripped the bark from 2 acres in one field. Has never before appeared as a pest and seems to be a native species.

CURRENT APHID (Myzus ribis L.)

Massachusetts A. I. Bourne (May 5): In one small planting here in town the lice were just beginning to cause the reddish discoloration of the leaves previous to the forming of the distorted "pockets." Indications in this particular case were of a rather heavy infestation.

Ohio E. W. Mendenhall (May 16): Currant aphids are bad on currant bushes in sections in southwestern Ohio. Underspray with nicotine solution seems to be effective.

IMPORTED CURRENT WORM (Pteronidea ribesi Scop.)

Delaware C. O. Houghton (May 2): Adults are just beginning to appear around the currant bushes. They are considerably later than usual and in smaller numbers.

Nebraska M. H. Swenk (April 20-May 15): The first reports for the year of injury to currants and gooseberries by the imported currant worm originated from Lancaster County on May 15.

PECAN

PECAN SPITTLE-BUG (Clastoptera obtusa Say)

Georgia J. B. Gill (May 23): The infestation of the pecan spittle-bug on pecan and hickory trees is the worst that has been observed in years.

FALL WEBWORM (Hyphantria cunea Drury)

Georgia J. B. Gill (May 23): Many webs of the fall webworm are already showing up on pecan trees, as well as on many kinds of forest and shade trees. It is expected that the second-generation larvae will appear in such numbers as to cause serious defoliation in pecan orchards and nurseries.

PECAN PHYLLOXERA (Phylloxera devastatrix Perg.)

Texas F. L. Thomas (May 21): A rather unusual number of samples of the pecan phylloxera have been received from 15 counties scattered over the eastern part of Texas and from the Coast to the Red River. We have not had opportunity to investigate any of these occurrences but they are certainly causing alarm to the various growers.

PECAN BUD-MOTH (Proteonteryx bolliana Sling.)

Georgia J. B. Gill (May 23): The pecan bud-moth is quite prevalent this year and is reported as occurring in injurious numbers on pecan nursery stock.

PECAN NUT CASE-BEARER (Acrobasis hebescella Hulst)

Georgia J. B. Gill (May 23): The pecan nut case-bearer is showing up in various sections of the pecan belt. The moths have been emerging for the past ten days and at this writing egg deposition on the nut clusters is taking place in commercial pecan orchards of this immediate region. It is too early to determine the extent of the infestation, but doubtless there will be considerable damage to the nut crop from the attacks of this insect.

Oklahoma E. E. Scholl (May 17): A trip to the southeastern and northeastern parts of the State revealed the fact that in the Counties of Carter, Johnston, Marshall, and Bryan the pecan case-bearer is doing a great deal of damage. The moths are just now emerging and the prospects are that we will have a very heavy crop of worms infesting the nuts within the next week or ten days. A number of spraying demonstrations in which the lime and arsenate of lead are to be used will be conducted.

PECAN LEAF CASE-BEARER (Acrobasis nebullella Riley)

Georgia W. F. Monroe (April 30): J. R. Mosely, of Macon, Ga., reported this insect doing rapid damage to young growth at this place, while D. H. Weeks reported it from Nichols, Ga.

J. B. Gill (May 23): The larvae of the pecan leaf case-bearer passed the winter quite successfully and have been doing considerable damage to the buds and foliage of pecan trees. In some orchards in south Georgia and north Florida the damage has been so severe that yields will be greatly reduced.

MAY-BEETLES (Phyllophaga spp.)

- GENERAL J. B. Gill (May 23): We have had reports of serious May beetle damage to pecan buds and tender shoots from pecan growers in Georgia, Alabama, and Mississippi. The species of May beetles responsible for the damage have not as yet been determined.
- Georgia Wm. F. Turner (May 10): Adults feeding on 2-year-old trees at night. Many have been nearly defoliated. Also cutting new shoots. Much land lying out in this section. Wonder if it helps to account for abundance of these insects.
- Mississippi J. E. McEvilly (May 4): The tender foliage of 1 and 2 year old pecan trees damaged by this pest. Apparently can be controlled with arsenical sprays.

MAGNIFICENT COSSID (Cossula magnifica Stkr.)

- Georgia Oliver I. Snapp (May 10): This cossid is now emerging from small pecan trees which have been heavily infested at Fort Valley.

CITRUS

APHIDIDAE

- Florida P. W. Mason (May 27): An aphid, not yet definitely determined, is doing serious injury to citrus trees in Florida. The center of infestation appears to be at or near Tampa and the aphid has spread north to Orange County and south at least as far as Fort Myers. It seems to have been present around Tampa for about one year. The most severely infested varieties of fruit are temples, kings, and tangerines. Oranges are fairly heavily attacked, while grapefruits, on the whole, are only slightly so. One grove of grapefruits, however, was observed to be heavily infested. Owing to the severity of curling of the leaves, no successful commercial control has yet been found. Parasites, predaceous insects, and fungous diseases are at work but have not made sufficient headway to hold the species in check. The most recent estimate, from reliable sources, is a loss of 30 per cent of this year's crop.

SOUTHERN FIELD-CROP INSECTS

COTTON

COTTON FLEA (Psallus seriatus Reut.)

Texas F. L. Thomas (May 21): Complaints regarding the cotton flea, one of which proved to be a coccinellid, are beginning to be received.

COWPEA CURCULIO (Chalcodermus aeneus Boh.)

South J. A. Berly (May 12): This is the first injury we have had of Carolina this insect for this season. They appear practically every spring and do slight damage to young cotton quite often confused with the boll weevil.

CORN ROOT APHID (Anuraphis maidi-radiciis Forbes)

South J. A. Berly (May 12): We have had only one report this season Carolina in regard to the cotton root louse.

BOLL WEEVIL (Anthonomus grandis Boh.)

North Franklin Sherman (May 26): First specimens out of hibernation Carolina were captured April 15, two specimens in different counties in warmer region of the State. The next similar finding was April 25. These three findings were before cotton was up; one was caught on the back of a man in a field planting cotton, the other two were taken from peach trees incidental to curculio work.

The first specimen found on young cotton was captured "on or about May 14" in the warmer part of our State (Scotland County) and was mailed May 20, with two others, all three being alive when it was received.

The above dates (mid-April) for first findings out of hibernation are approximately the same as in 1923, but finding weevils on young cotton on May 14 is about a week earlier than the first similar record in 1923.

Mississippi J. E. McEvilly (May 8): Several thousand pounds of calcium arsenate and dusting equipment bought by the farmers in this section to combat ravages of the weevil this season.

Texas B. R. Coad (May 1): The boll weevil was reported on April 23 as plentiful on young cotton in the Rio Grande Valley in the vicinity of Pharr, Tex.

F. L. Thomas (May 21): The hibernation work with the boll weevil is still being carried on, but to date only 10 weevils have emerged out of over 5,000 which were placed in the cages.

A. COTTON STAINER (Dysdercus andreae L.)

Porto Arthur H. Rosenfeld (May 18): I made rather an interesting Rico observation on the 12th inst. at Hacienda Isidore, near Santa Isabel,

on the South Coast, Isidoro being one of the outlying colonies of the Central Aguirre. On a previous trip about a month ago Mr. Wolcott and I had noticed the cotton stainer, or "union" as it is called here, quite abundant on volunteer cotton trees in that section and on this trip I noticed the adults clustered in large numbers on small pieces of the silk of the Caiba on the ground, at times there being from forty to a hundred insects on a small piece of fiber. Incidentally, the chickens were busily proving their interest in this particular insect. Mr. Wolcott tells me that he has never noticed these stainers on this Caiba fiber before, and therefore the observation may have some interest, as one of the Trinidad publications some time ago recommended the use of bunches of this fiber around cotton plants as an attractant for the *Dysdercus* - the species found at Isidoro was andreae Linnaeus, by the way - which could afterwards be collected and destroyed by dropping them into kerosene or fire.

CARABID BEETLE (Anisotarsus nitidipennis, Lec. det. Schwarz)

Texas

F. C. Bishopp (May 24): This carabid beetle was found in great numbers in cotton fields in the vicinity of Dallas during the middle of May. Dozens of the beetles were often found about an inch under the soil immediately surrounding the germinating cotton, and they appeared to be gnawing on the cotyledons as they unfolded. The stand of cotton in certain fields was seriously damaged.

TOBACCO

TOBACCO THRIPS (Frankliniella fusca Hinds)

Florida

F. S. Chamberlin (May 7): Heavy rains this month have practically eliminated the infestation of the tobacco thrips at Quincy.

SOUTHERN GREEN STINK-BUG (Nezara viridula L.)

Florida

F. S. Chamberlin (May 17): Very few stink-bugs have been observed on tobacco planted around Quincy this season. It appears that the low temperatures last winter reduced the numbers of this insect to a marked degree.

TOBACCO BUDWORM (Heliothis virescens Fab.)

Georgia

F. S. Chamberlin (May 1): Tobacco fields in this region are heavily infested with this pest at Tifton.

GREEN JUNE BEETLE (Cotinis nitida L.)

Tennessee

A. C. Morgan (April 29): The larvae of the grubworm beetle is quite injurious at present on tobacco beds which were sown in the old seed beds of last year. It is becoming more customary to sow beds in the same situation year after year and protect them during the summer with a covering of manure, straw, or tobacco stalks. This covering has proven attractive to the beetle for the deposition of its eggs and remedial measures have been necessary upon a large number of these second-year beds.

TOBACCO SPLITWORM (Phthorimaea operculella Zell.)

Florida F. S. Chamberlin (May 8): Slight damage is being caused by this insect in fields of bright leaf tobacco.

TOBACCO HORNWORM (Protoparce sexta Joh.)

Florida F. S. Chamberlin (May 6): The tobacco hornworm is making its first appearance in tobacco fields this season.

GARDEN SLUG (Agriolimax agrestis L.)

Florida F. S. Chamberlin (April 30): A slug, apparently the garden slug, has been found doing slight damage to newly set tobacco at Quincy.

F O R E S T A N D S H A D E - T R E E I N S E C T S

MISCELLANEOUS FEEDERS

PERIODICAL CICADA (Tibicina septendecim L.)

Illinois W. P. Flint: Nymphs of the periodical cicada were found about 5 or 6 inches below the surface of the soil in southern Illinois on May 15.

Mississippi R. W. Harned (May 27): Brood XXIII of the periodical cicada is now appearing in large numbers throughout a large part of the State. So far, specimens have been received from Carroll, Calhoun, Benton, Bolivar, Copiah, DeSoto, Holmes, Lafayette, Leflore, Madison, Marshall, Rankin, Sunflower, Yalobusha, and Yazoo Counties.

GIPSY MOTH (Porthetria dispar L.)

Massachusetts A. I. Bourne (May 23): The gipsy moth began hatching about the middle of the month. On the whole they are finding them rather fewer than last year. In western Middlesex County Mr. Farrar reports finding only 20 egg masses in 1,200 young apple trees.

BROWN-TAIL MOTH (Euproctis chrysorrhoea L.)

Massachusetts A. I. Bourne (May 23): In Essex County Mr. Stevens, who has been connected with the clean-up work, reports the pest very generally spread throughout that section, but very few in number both in orchards and along the highways.

In Middlesex County the pest in orchards seems to be practically extinct, Mr. Farr reporting from the town of Lincoln finding only six or seven in a block of nearly 2,000 trees.

In the northern part of Worcester County the pest is practically wiped out, except for wild growth and along the highways. In the southern part of the county one grower reports finding approximately only one nest to 1,000 trees in his orchards, and from his observation believes this is typical of that general locality. In fact, many growers in that section have come to regard that as having reached a negligible stage as far as

being a pest which demands their attention. This is borne out by Mr. Davenport, the President of the State Fruit Growers' Association, who reports that in his orchard in the town of Grafton he has failed to find any brown-tail caterpillar nests thus far this season.

TERRAPIN SCALE (*Lecanium nigrofasciatum* Perg.)

Missouri L. Haseman (May 22): The terrapin scale is attracting much attention in Carthage and other southwestern Missouri cities, on shade trees largely.

BAGWORM (*Thyridopteryx ephemeraeformis* Haw.)

Ohio H. A. Gossard (May 20): On April 11, bagworm cocoons were received from New Vienna on plum.

Missouri L. Haseman (May 22): Bagworms are just beginning to emerge in central Missouri and are practically threatening to foliage and fruit in some sections of southwestern Missouri. Recommendations on the use of arsenical sprays will undoubtedly help materially with this season's epidemic.

BOXELDER

BOXELDER APHID (*Periphyllus neundinis* Thos.)

Nebraska M. H. Swenk (April 20-May 15): An outbreak of the boxelder aphid is reported from Greeley County.

ELM

EUROPEAN ELM SCALE (*Gossyparia spuria* Modeer)

Wisconsin E. L. Chambers (May 15): Several elms killed by this insect. Many weeping and American elm trees practically plastered with the scale, (underside of limbs).

ELM COCKSCOMB GALL (*Colopha ulmicola* Fitch)

Missouri L. Haseman (May 22): More abundant on young wild elms than I have ever seen them before.

ELM SAWFLY (*Cimbex americana* Leach)

Massachusetts A. I. Bourne (May 23): The elm sawfly was first observed on May 18 and 19, when the adult flies were found ovipositing on the small leaves of Camperdown elm here on the campus. This date is approximately the same as that on which the first specimens were noted a year ago.

LOCUST

LOCUST BORER (*Cyrtene robiniae* Forst.)

New York E. P. Felt (May 26): The locust borer grub work is showing up very conspicuously on locusts in Dutchess County.

LARCH

LARCH CASE-BEARER (*Coleophora laricella* Hubner)

Connecticut

W. E. Britton (May 13): Larvae mining the new leaves at Avon.

MAPLE

GLOOMY SCALE (*Chrysomphalus tenebriosus* Comst.)

Georgia

Roy Rogers (April 24): Severe infestation at Boxley.

OAK

OAK LECANIUM (*Lecanium quercifex* Fitch)

South
Carolina

J. A. Berly (May 1): Appearing in Anderson County on wateroak as usual. Very abundant in some localities.

Georgia

M. B. Bridges (April 23): Severe injury is reported from Woodland and Barnesville attacking oak, and from Powder Springs, attacking water oak.

Oliver I. Snapp (April 29): An oak tree at Woodbury is very heavily infested. Lubricating-oil emulsion is being used.

INSECTS ATTACKING GREENHOUSE

AND ORNAMENTAL PLANTS

CHRYSANTHEMUM

CHRYSANTHEMUM GALL-MIDGE (*Diarthronomyia hypogaea* F. Loew)

Ohio

E. W. Mendenhall (May 7): The chrysanthemum gall-midge has been quite bad during the year at Springfield, but we have them under control quite well now by using nicotine-sulphate solution and examining the plants quite often, and destroying infested plants.

Wisconsin

E. L. Chambers (May 15): The chrysanthemum midge stages an annual fight in greenhouses both at Madison and Milwaukee but never seems to be a serious pest elsewhere in the State.

ROSE

SOFT SCALE (*Coccus hesperidum* L.)

Georgia

J. H. Pressley (May 25): Infestation by this insect severe to roses at Albany.

A SCALE (Lecanium sp.)

Oregon Don C. Mote (May 10): This insect on rose at Corvallis is Lecanium sp., probably frested Lecanium. Specimens covered with mealy wax, giving the appearance of a mold spot on the stem of the rose.

MISCELLANEOUS

HEMISPHERICAL SCALE (Saissetia hemisphaerica Targ.)

Wisconsin E. L. Chambers (May 15): There seems to be an unusually large number of inquiries from various parts of the State for the identification and control of this pest on fern.

CITRUS MEALYBUG (Pseudococcus citri Risso)

Wisconsin E. L. Chambers (May 15): For the first time this mealybug has been found to be a serious pest of primroses in the Milwaukee section.

TULIP SCALE (Toumeyella liriiodendri Gmel.)

Georgia R. E. Bower (March 29): Infestation severe on banana shrub at Dixie. (April 8): Severe infestation on banana shrub reported by Mrs. Pierce Montford at Metcalf. It was stated by former entomologist here to be quite severe and to cause considerable damage.

OYSTER-SHELL SCALE (Lepidosaphes ulmi L.)

Minnesota A. G. Ruggles (May 15): The oyster-shell scale seems to have become more virulent the last few years in hedges of cotoneaster. Even buckthorn had been killed in spots.

APHIDIDAE

Texas F. C. Bishopp (April 21): The plum and rose aphids are rather more abundant than usual at this time of the year at Dallas and vicinity. Practically all rose bushes are heavily infested and spraying is being very generally practiced. Aphids are very abundant on all sorts of flowers, vegetables, shrubs, and trees.

Indiana H. F. Dietz (May 23): As a general observation on various species of plant-lice attacking ornamental plants, I would say that these are far less abundant than I have seen them at the same time of the year for the past five years.

STALK BORER, (Papaipema nitela Guen.)

Virginia Rex Hunt (May 26): Two of these second-instar larvae were found in a Steeple bush plant (Spiraea tomentosum) in my yard at Clarendon. They were in new growth.

CYCLAMEN MITE (Tarsonemus pallidus Banks)

Wisconsin E. L. Chambers (May 15): The past season was just a little harder on some of the cyclamen growers than usual. The growers feel lucky if they do not have to throw out more than 10 per cent of their crop during the holiday markets at Madison and Milwaukee.

LEAFHOPPERS (probably Empoa rosae L.)

Connecticut M. P. Zappe (May 22): Leafhoppers, probably Empoa rosae L., are attacking apple and rose at Milford, Hamden, and Cheshire. The weather has been cold and rainy. The abundance of insects is more than last year. Syrphid larvae are scarce and very few insects have been destroyed.

IVY SCALE (Aspidiotus hederæ Vallot)

Georgia H. K. Shirley (January 24): Slight damage done by this scale to Croton sp.

TEA SCALE (Fiorinia theae Green)

Georgia O. C. Boyd (January 23): This scale is covering the leaves and stems of Camellia japonica at Thomasville.

FICKLE MIDGE (Sciara inconstans Fab.)

Oregon Don C. Mote (May 6): Larvae were found attacking roots and crown of calla lily in garden soil used for growing household plants at Portland.

I N S E C T S A F F E C T I N G M A N

A N D D O M E S T I C A N I M A L S

MAN

ROCKY MOUNTAIN SPOTTED FEVER TICK (Dermacentor venustus Banks)

Colorado F. C. Bishopp (May 24): At least two cases of Rocky Mountain spotted fever have occurred in northern Colorado this spring. Both of these were in regions where the disease has rarely or never occurred before.

CHIGGERS (Trombicula tlalzahuatl Murray)

Texas F. C. Bishopp (May 24): Chiggers were first observed in the vicinity of Dallas on May 5, and became very annoying to man by the middle of the month.

RAT MITE (Liponyssus bacoti Hirst)

Texas F. C. Bishopp (May 24): This mite has been causing some annoyance in offices and stores in Dallas during this spring. It is expected that the campaign which is now being staged against rats will effect a large degree of control.

CATTLE

SCREWWORM (Chrysomya macellaria Fab.)

Texas F. C. Bishopp (April 9): The first specimens of screwworm flies were observed in Dallas on this date. They constituted a very small percentage of the fly population about the packing houses. (April 17): There has been a very decided increase in the number of screwworm flies since the last date when they reached approximately 8 per cent of the total catch in traps. (May 24): Screwworm flies increased in abundance considerably throughout the month of May, despite the comparatively cool, dry weather. Practically no cases of screwworm infestations of livestock were reported, however, up to this date.

D. C. Parman (May 23): The adult fly has increased very little during the month at Uvalde, but cases of worms have increased rapidly during the last few days. Goats and sheep; 13 cases per 1,000; loss during the month approximately 8 head per 1,000, mostly kids and lambs. Cattle and horses; in canyons, 3 cases per 1,000; in lower country, 47 cases per 1,000. Loss in calves 80 per 1,000, all calves infested.

HORNFLY (Haematobia irritans L.)

Texas F. C. Bishopp (April 10): Hornflies began to appear in annoying numbers about this date. (May 24): While hornflies have increased considerably during May, they are not as abundant as usual at this time of the year, probably owing to the comparatively dry spring which has been experienced in the vicinity of Dallas.

D. C. Parman (May 23): The horn fly has increased to some extent in all of the territory during the month except in the strip of territory about 15 miles wide south of town in which the heavy hail fell in April and a very heavy rain on May 22. It is rare to see an adult; other places from 50 to 2,000 flies on cattle.

OX WARBLE (Hypoderma lineatum DeVill.)

GENERAL F. C. Bishopp: Mr. W. E. Dove reports the grubs of this species to be maturing and dropping at various points in North Dakota, South Dakota, and Montana. A greater number had left the cattle

in eastern Montana than in the Red River Valley. In the vicinity of Aberdeen, S. Dak., it was estimated that 60 per cent of the larvae had emerged from the livestock.

South
Dakota

F. C. Bischoff: At Aberdeen, S. Dak., W. E. Dove reports the season fairly well advanced and some Hypoderma larvae already mature and out of the hosts on April 7.

Texas

F. C. Bischoff: Cattle grubs were rather more abundant in the vicinity of Dallas during the past winter than usual. However, warble flies were apparently no more abundant than normal. Cattle became free of all grubs about the middle of March. At San Angelo, however, O. G. Babcock found a few specimens which would not be mature for about two weeks when he examined herds on March 20.

BLOWFLIES

Texas

F. C. Bischoff (April 20): Phormia regina Meig. have been very abundant during the past month. They are now sufficiently numerous to necessitate trapping and other control measures at the packing houses. (May 24): The black blowfly is still present in considerable numbers, the development of the species favored by the cool spring. At the packing houses in the vicinity of Dallas they still outnumber C. macellaria.

D. C. Parman (May 21): Cynomyia and Calliphora disappeared. The latter part of March the change in species during the last month for a trapping period of 48 hours is as follows:

Species	April 22	May 21
<u>Chrysomya macellaria</u>	2,080	2,040
<u>Phormia regina</u>	360	17
<u>Lucilia sericata</u>	4,000	1,201
<u>Lucilia caesar</u>	2,480	400

STABLE FLY (Stomoxys calcitrans L.)

Texas

F. C. Bischoff (April): During warm periods in April stable flies have been quite annoying to dairy cattle in the vicinity of Dallas. (May 24): The stable fly has caused some annoyance to dairy stock and work animals in the vicinity of Dallas throughout this month. They are apparently no more numerous than usual.

HORSE-FLIES (

Texas

D. C. Parman (May 23): The canyon horse-fly, Tabanus rubescens Bellardi, has increased some during the month but is not yet very annoying to cattle and horses except in local areas where two to five flies are usually on most cattle. The unusual occurrence is that the flies are as numerous as far south as Carizzo Springs as they are in the mountains, and the mountain infestation is

unusually low for the season. An occasional specimen of Tabanus atratus was observed in the river bottoms south of Uvalde, May 23.

WINTER TICK (Dermacentor albipictus Pack.)

North Dakota F. C. Bishopp: The winter tick has been reported from a number of localities in the Northwest. They were very abundant on antelopes in the preserve in North Dakota and were thought by the warden to be responsible for the death of some of the animals.

POULTRY

CHICKEN MITE (Dermanyssus gallinae Redi)

Texas F. C. Bishopp (April 26): Chicken mites are causing the usual amount of loss where they are not vigorously fought. (May 24): The usual amount of loss and annoyance due to this parasite is being experienced in northern Texas, but control is being accomplished more effectively through the general use of carbolineum and crude petroleum.

CHICKEN TICK (Argas miniatus Koch)

Texas F. C. Bishopp (April): A good many reports are being received of injury and losses among fowls due to the chicken tick. Much carbolineum is being used this spring to combat this pest and the mite.

STICKTIGHT FLEA (Echidnophaga gallinacea Westw.)

Texas D. C. Parman (May 23): The hen flea has not appeared this season in places where heavy infestations have been found in former years. It is very rare to see more than three or four specimens on a fowl at Uvalde.

CHICKEN LICE

Texas F. C. Bishopp (April): Chicken lice are reported as causing some loss among young chicks and some flocks are heavily infested. Throughout the country many farmers and some poultrymen are using various proprietary remedies in the drinking water or feed of the fowls. These materials are mostly lime-sulphur mixtures. They are absolutely valueless but are widely advertised and thousands of dollars are being wasted upon them.

INSECTS INFESTING HOUSES AND
PREMISES

HOUSE FLY (Musca domestica L.)

Missouri L. Haseman (April 25): This pest is beginning its early-season operation and is attracting some attention on the farms and in the smaller towns. With the first warm days it began to appear in the homes.

Texas F. C. Bishopp (April 9): Houseflies have increased materially in number in the last week at Dallas and vicinity. They are now becoming evident about homes. (April 20): Flies are more abundant and are now causing some annoyance by entering houses.

LARDER BEETLE (Dermestes lardarius L.)

Ohio H. A. Gossard (May 20): On May 9 Dermestes lardarius larvae were sent to us from Chandlerville, where the species had become somewhat numerous in a dwelling house.

TERMITES (Reticulitermes flavipes Kol. and
R. virginicus Banks)

Ohio H. A. Gossard (May 20): On May 15 we received white ants from Fremont, where they were said to be doing great damage to several dwelling houses.

Texas F. C. Bishopp (April 29): A considerable number of reports of termites infesting buildings in Dallas have come to our attention. Most of the infestations are in dwelling houses and in certain instances the damage is very heavy. (May 24): During the late winter and early spring a number of reports of damage to buildings in Dallas from termites, probably Reticulitermes virginicus Banks, have come to this office. During the latter part of April and first half of May several large flights of these insects were observed.

A POWDER-POST BEETLE (Lyctus sp.)

South Dakota H. C. Severin and A. F. Ford (May 12): All timber of cottonwood is being badly injured by powder-post beetles in Clay County, the damage being severe.

ARGENTINE ANT (Iridomyrmex humilis Mayr)

California M. R. Smith (May 10): I have recently received specimens of this pest from Monterey, which were collected there on April 5 by L. S. Slevin.

Texas F. C. Bishopp (April 22): The Argentine ant has been causing more or less annoyance as a household pest in Dallas during the last three weeks. The ants seem to be rather less abundant in houses than usual, probably because of the large number of aphids which are present and furnishing food for them.

CARPENTER ANT (Camponotus herculeanus pennsylvanicus
DeG.)

Texas F. C. Bishopp: A few reports have reached this office of the large carpenter ant occurring in considerable numbers in houses. These enter the houses mostly at night.

AN ANT (Eciton schnitti Emery)

Mississippi M. R. Smith (May 20): Many specimens of this species of ant were recently taken from the water of the well at Maben Mills. The ants on falling into the water formed clumps or groups of many individuals. Where the ants decomposed a bad odor and taste were given to the water. They evidently fell into the well from the side where they were probably temporarily resting.

A WASP (Stigmus fulvicornis Rohwer)

Mississippi M. R. Smith (May 20): This species of pemphredonid wasp has been doing considerable damage to the floors of a house in Starkville. The wasps make small holes in the floors about the diameter of the head of a pin. These holes lead to nests in the flooring, in which small aphids are stored. So far as the writer is aware this is the first time that a pemphredonid wasp has ever been observed to damage floors in this manner.

ST O R E D - P R O D U C T I N S E C T S

INDIAN-MEAL MOTH (Plodia interpunctella Hbn.)

New York P. J. Chapman (April 19): A moth was received from Johnstown, which was attacking cereals.

GRANARY WEEVIL (Calendra granaria L.)

New York C. R. Crosby (April 30): A bin of 2-year-old wheat is badly infested at Campbell. Sample was received.

DARK MEALWORM (Tenebrio obscurus L.)

Kansas J. W. McCulloch (May 15): This insect is very numerous in hay stored underground in one of the mines of the Vinegar Hill Zinc Company at Baxter Springs.

BLACK CARPET BEETLE (Attagenus piceus Oliv.)

Ohio H. A. Gossard (May 20): On April 7 the larvae of this beetle were received from Homerville, where they were injuring the stored seed of redbud grass.

CONFUSED FLOUR BEETLE (Tribolium confusum Duv.)

Wisconsin E. L. Chambers (May 15): About a dozen inquiries from Madison have been made as to the control of this pest and in several instances specimens were submitted.

THE INSECT PEST SURVEY BULLETIN

A periodical review of entomological conditions throughout the United States,
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R. C. TREHERNE

The Insect Pest Survey records with sincere grief the death of its most esteemed collaborator R. C. Treherne, Entomologist, in Charge of the Canadian Insect Pest Review, the official organ for Survey work in the Dominion. Mr. Treherne was largely responsible for the rapid development of this line of work in Canada and his contributions to our Bulletin in the form of "Outstanding Features for the month in Canada" were always received with interest by our readers. He laid the foundation of this work so firmly that the superstructure, the future development of Survey work in Canada, is assured.

OUTSTANDING ENTOMOLOGICAL FEATURES IN THE UNITED STATES FOR JUNE, 1924

Rather serious outbreaks of armyworms have already been reported from Illinois, southern Michigan, Indiana, and eastern Iowa, while a slight outbreak is recorded in Missouri.

Cutworm ravages are generally severe from New England and the Middle Atlantic States westward to North Dakota, Nebraska, Montana, and Kansas.

Grasshoppers are reported as injurious in Mississippi, Nebraska, Oklahoma, and Texas, as well as in some parts of Montana, Utah, and California. In the last State the damage is unusually severe.

Wireworm injury to many crops is reported from Massachusetts southward along the Atlantic Coast to New Jersey and also from North Dakota, South Dakota, Nebraska, Kansas, and Missouri.

The Hessian fly is rapidly increasing in central Ohio and parts of Indiana, and a serious condition with regard to this insect is reported from North Dakota, southeastern Nebraska, and eastern Kansas.

The chinch bug is not as serious as anticipated in Indiana and Illinois. There is still a serious infestation, however, in southwestern and north-central Missouri and along the southern border of Nebraska, westward to Furnas County, thence southward over eastern Kansas and northeastern Oklahoma.

The jointworm is reported as abundant in central and east-central Tennessee and central and southern Illinois, while the wheat strawworm injury is reported as severe in parts of Kansas.

The corn earworm is again epidemic as it was in 1921. Reports of serious damage to tomatoes, beans, cotton, and corn have already been received from the South Atlantic States, westward to Texas. In the South Atlantic States, including Alabama, the pest has assumed the armyworm habit and destroyed a very considerable amount of vetch.

Sprouting corn is being rather severely damaged by the larva of the pale-striped flea-beetle, and many reports of injury by the seed-corn maggot are being received from New York, westward to Iowa and Nebraska.

The rosy apple aphid is more abundant than usual in the New England States, south to New York and westward to Missouri.

The tent caterpillar is appearing in serious numbers in the New England and the Middle Atlantic States, southward to Maryland.

The rose chafer is reported as very numerous in New England and a serious outbreak is occurring in southwestern Indiana and the greater part of Tennessee.

Brood XXIII of the periodical cicada is appearing over most of its charted range.

The boll weevil is reported as becoming increasingly prevalent in Georgia. It is also reported from South Carolina, Oklahoma, Texas, and Mississippi.

The tomato suck-fly is extending its range northeastwardly in Texas.

An interesting application of the aphidozer to survey work is given under the items on the pea aphid.

OUTSTANDING ENTOMOLOGICAL FEATURES FOR CANADA FOR JUNE, 1924.

The cottony maple scale is reported to be spreading rapidly in the Greater Vancouver District, B. C., affecting a variety of shade and fruit trees including maple, chestnut, pear, apple, plum, and cherry.

Tent caterpillars, of which the forest tent caterpillar, Malacosoma disst Hbn., is the most injurious, are causing great damage in British Columbia from Armstrong north to Salmon Arm where nearly all strawberry patches, as well as raspberries have been devoured, and many fruit trees defoliated. The forest tent caterpillars have completely devoured the wild bush and are migrating into all cultivated crops.

Bruce's measuring worm, Rachela bruceata Hulst, was infesting wild bushes and apple trees around Armstrong, B. C., in immense numbers in early May. Some were full grown by May 15.

A very serious grasshopper outbreak is developing over the whole of the dry interior of British Columbia. Melanoplus spp. are mainly responsible in the Okanagan Valley where great loss is being experienced in the vegetable and tomato fields, while Cannula pellucida Scud. is doing great damage in the Nicola-Kamloops area.

The northern sedge caterpillar, Otenucha virginica Charp., has appeared in outbreak form in bogs and swamps in the locality of Treesbank, Manitoba. The larvae, which are present in countless numbers, usually feed on various sedges, but will readily turn to grasses, especially brome grass.

Garden springtails have been causing trouble at Dartmouth, N.S., where they were present in considerable numbers during the latter part of May, attacking young spinach seedlings.

The satin moth has been very materially reduced in numbers in the Vancouver district, B.C., doubtless owing to winter killing. An examination of several stands of poplar revealed the larvae to be almost entirely absent from Lombardy poplar, and only in sufficient numbers in white poplar to cause about 25 per cent defoliation.

An extensive and destructive outbreak of the eastern spruce bark-beetle is reported at Frater, Ont.

CEREAL AND FORAGE - CROP INSECTS

MISCELLANEOUS FEEDERS

ARMYWORM (Cirphis unipuncta Haw.)

- Michigan R. H. Pettit (June 24): The first armyworms appeared today and they are working in corn in the southern part of the State. The weather has been ideal for an armyworm outbreak and I am expecting more in the immediate future.
- Indiana W. H. Larrimer through W. R. Walton (June 17): On my way back from Ohio I stopped off at Knightstown, Ind., to look over the chinch-bug-resistant corn experiment and while examining the wheat fields for chinch bugs I noticed a very moderate infestation of armyworms. Since my return I have found this pest present in various kinds of crops. In some cases considerable damage is being done to garden crops, particularly lettuce. The predominant species is C. unipuncta, although there are quite a number of the variegated cutworms, Lyceophot margaritosa Haw. The county agents of this section are fairly familiar with the control of these armyworms and, consequently, I do not anticipate any serious developments. I believe already in one or two cases control measures have been started. The worms vary in size from very small to mature. This particular season being rather favorable for cutworms in general, it is not surprising that we have these local outbreaks.
- J. J. Davis (June 21): Moths were common at Lafayette during May. The first report of injury came from Gibson County, in the southwest corner of the State, June 4. This was followed by reports from other counties to the north. The past week (June 16-20) they have been common in Tippecanoe, Benton, White, Carroll, Rush, Montgomery, and Porter Counties. The injury has been conspicuous in cornfields which were in timothy last year, plowed for corn this spring, and because of the unfavorable weather for cultivating, the timothy and weeds grew up abundantly in the wetter parts of the field. This offered good conditions for egg laying by the moth. The armyworms are, therefore, scattered more or less generally through such cornfields and they are of all sizes. There is also an abundance of armyworms in timothy and other grassy fields and we anticipate more trouble if they migrate from such fields to corn and small grain, as they no doubt will do in some cases.
- Illinois Henry Schunerelpfenning (June 12): There is an infestation of armyworms in my meadow land at Manito.
- C. C. Compton (June 14): Armyworms are causing severe damage to grass and corn in central LaSalle County.
- W. P. Flint (June 18): There are general scattered outbreaks of armyworms from southern to north-central Illinois. Worms are appearing mainly in timothy, oats, and wheat. Moths are still abundant. Parasites from examinations to date are very scarce.

- Iowa Carl J. Drake (June 26): Telegram. Armyworms are doing great damage in eastern Iowa.
- Missouri L. Haseman (June 20): A few scattered complaints have been received showing this pest to be present though not especially serious.

CUTWORMS (Noctuidae)

- Maine E. M. Patch (June 13): At Mapleton on June 13, $2\frac{1}{2}$ acres of oats were pretty well cut down by Agrotis ypsilon Rott. Larvae at that date were about $1\frac{1}{2}$ to $3\frac{1}{4}$ inch. A 15-acre grain field is evidently threatened. Oats are 4 inches high. Crows are feeding greedily night and morning on the cutworms but they are not touching the grain.
- Massachusetts A. H. Bourne (June 24): Cutworms are much more prevalent and doing more damage throughout the State than for the last few years. They are particularly bad here in the Connecticut Valley in tobacco fields both the subsurface injury and that done by the climbing species are unusually severe on young newly-set plants. The attack is so severe as to be causing very general anxiety on the part of growers.
- New York A. B. Buchholz (June 14): From the damage I have seen in Columbia County to garden and field crops, and from the reports I have received, I would judge that there is what might be called an epidemic of cutworms.
- Michigan R. H. Pettit (June 19): Cutworms are worse than usual.
- Ohio H. A. Gossard (June 20): Cutworms have been very abundant, but since the weeds and succulent plants of all kinds have been likewise abundant they have had plenty of forage and have bothered garden plants less than in some years when they were not so plentiful.
- Indiana and Ohio J. J. Davis (June 21): The Holland-St. Louis Sugar Company reports extensive injury to sugar beets on June 14 at Auburn, Ind., and Rockford, Ohio, and other parts of northern Indiana. Observations indicate injury in fields which were in red clover and timothy sod last year. Where fields were in alfalfa and sweet clover no losses have been observed. Cutworms were also reported from Elkhart June 3, cutting off grape shoots at the ground.
- North Dakota R. L. Webster (June 13): There is damage on clover and timothy sod spring plowed and seeded to flax in Cass and Richland Counties. This is not the pale western cutworm. The area involved is 80 per cent on one field in Cass County.
- Nebraska M. H. Swenk (May 15-June 15): Some reports of injury to young corn by cutworms have been received but, except for an area in the sandy soil of Holt County, injury by cutworms to corn was, on the whole, less than normal.

- Kansas J. W. McCulloch (May 31): The county agent of Labette County reports worms present in large numbers in local areas in alfalfa fields and gardens.
- Montana W. C. Cook (June 31): The first outbreak of Chorizagrotis auxiliari Grote since 1921 is in Judith Basin County, with abundance above normal. Several hundred acres of wheat were damaged.

GRASSHOPPERS (Acridiidae)

- Delaware C. O. Houghton (June): Grasshoppers have appeared only in very small numbers so far this year at Newark. I believe that the very dry season of last year, coupled with the very wet spring we have just had, has had an important bearing on this. The species is Melanoplus femur-rubrum DeG.
- Mississippi R. W. Harned (June 20): Grasshoppers, specimens of which have not been received, have been reported as seriously injuring soybeans in the vicinity of Indianola.
- Nebraska M. H. Sverk (May 15-June 15): Grasshoppers were reported doing some injury in alfalfa fields in Hitchcock County during the second week in June but, on the whole, these insects seem much less numerous than for several years past at this time of the year.
- Oklahoma E. E. Scholl (June 2 to 7): Melanoplus differentialis Thos. is attacking alfalfa, cotton, and sweet clover in Carter, Johnston, Logan, Jefferson, Cotton, Love, Tillman, Kingfisher, and Ellis Counties. The abundance is greater than in an average year and there are more than last month. (June 9): The grasshopper campaign in this State is in full swing. The insects are very numerous in the southwestern part of the State with two outbreaks of minor importance in Logan and Ellis Counties. (June 23): The grasshopper situation has increased in seriousness and in the area infested. The entire southwestern part of the State is now covered by grasshoppers and in many places more than 50 per cent of the cotton and alfalfa has been destroyed. In counties where the agents began control work about 10 days ago the infestations have been very much reduced. The main drawback has been that good fresh poison was not available in all infested areas.
- Texas F. L. Thomas (June 4): The grasshopper outbreak extends from Childress County, in the northern part of the State, southwest through Gaines, Reeves, Schleicher, and Frio Counties, thence eastward through DeWitt, Waller, and Anderson Counties to Franklin and Delta Counties in the northeastern part of the State. (June 20): Practically all of the complaints are the result of injury to cotton, but some injury has occurred on corn. A few cotton fields have been replanted. Grasshoppers are increasing in the north and eastern sections of the infested area and decreasing in the southwestern section. R. R. Reppert, Extension Entomologist, has done a large amount of work in demonstrating to groups of county agents the mixing and distribution of poisoned bran mash. White arsenic has been bought by the carload.

Montana

Robert L. Shotwell (May 26): From several sections in the northern part of Chouteau County Melanoplus atlantis Riley has been reported as having taken this year's crop. Damage to this year's wheat crop has already been reported from several townships in Liberty County. Last year's stubble fields are proving to be a menace to adjacent wheat fields. These grasshoppers are hatching in considerable numbers in Hill County but no serious damage has been reported as yet. Though not as numerous as M. atlantis, still Melanoplus femur-rubrum are hatching in sufficient numbers in Hill County to be a serious pest.

J. R. Parker (June 24): Taking the State as a whole, grasshoppers are nowhere nearly as abundant as in 1923. In certain areas, however, they are still very numerous and would do great damage were it not for strenuous campaigns put on in the infested counties. The most heavily infested Counties are Teton and Pondera, which are in the central part of the State just east of the Divide. The southern ends of Glacier and Toole Counties have scattered areas as well as Chouteau and Hill Counties. These areas are west of the most heavily infested areas of last year and it seems quite certain that they are the result of migrating swarms of hoppers which left the infested areas last year and flew West. Another infested area lies just west of the Continental Divide in the Counties of Granite, Powell, and Deerlodge. The damage done by grasshoppers in this State thus far this season is very slight. The campaigns in the infested localities have been very successful.

Utah

Geo. F. Knowlton (June 18): Grasshoppers are again becoming destructive west of Smithfield and Amalgam; some farmers are using poisoned bait to stop their migrations. Last year in this section several tons of poisoned bait were used, but in places where it was not used many fields of grain were stripped of leaves by the time the grain was headed out.

I. M. Hawley (June 23): Grasshoppers are doing considerable damage in several parts of the State, particularly in Utah, Millard, and Cache Counties. On the whole, they are more abundant than last year.

California

C. M. Packard (June 16): This is an unusually bad grasshopper year. Swarms of hoppers have appeared in many localities not usually suffering serious damage. They have developed several weeks earlier than usual. M. devastator Scud. already is largely in the adult stage on dry lands. The unusual outbreak is probably due to mild, dry winter followed by early spring. They are attacking fruits, vineyards, grains, and alfalfa in the foothills and valleys over the whole State.

WHITE GRUBS (Phyllophaga spp.)

Delaware

C. O. Houghton (June 24): Comparatively few "June beetles" have appeared to date, with the exception of the large flight of P. tristis noted in a previous report.

Missouri

L. Haseman (June 20): White grubs have never been so abundant and trees are still roaring with the beetles. Several species are present.

WIREWORMS (Elateridae)

- Massachusetts A. I. Bourne (June 24): Tobacco growers, as well as onion growers, are very seriously threatened by an unusual abundance of wireworms. This does not seem to be limited to any particular region or type of soil but, as nearly as our observations and reports indicate, is a very general condition this season up and down the Valley.
- New York D. D. Ward (June 14): Serious wireworm injury to corn and potatoes is being reported from many parts of Onondaga County, particularly on the lighter soils. In many cases corn plantings have been almost completely destroyed. As many as 10 wireworms have been found in a single hill.
- New Jersey Harry Sally (June 10): Insects seriously damaging sweet corn, as many as 11 larvae being found in a hill. These insects are found on land that was not in corn last year. (The larva accompanying this material was Limonius sp. - J. A. H.)
- Missouri L. Haseman (June 20): Wireworms have been especially abundant this year and have done some damage to corn.
- North Dakota C. N. Ainslie (May 29): Much stock is raised in this section (Sanger) of the State and wireworms threaten to cripple the industry by attacking the corn crop in great numbers. It is said to be a new pest in these parts.
- South Dakota A. L. Ford and E. C. Severin (June 10): Wireworms of undetermined species are attacking corn at Mission Hill and Beresford.
- Nebraska M. H. Swenk (May 15-June 15): Some injury to the planted seed-corn by wireworms was reported, but surprisingly little, considering the backward character of the spring.
- Kansas J. W. McColloch (June 15): Wireworms have been especially bad in cornfields at Manhattan and Irving. Counts made in a number of fields at Manhattan show that the stand has been reduced 10 per cent. Most of the larvae were Melanotus sp.

WHEAT

HESSIAN FLY (Phytophaga destructor Say)

- Ohio T. H. Parks (June 23): Although very few Hessian flies hibernated in the wheat fields of central counties, the insect is making a rapid come-back. This remarkable rise in numbers is apparently due to numerous rains during the hatching period. It rained at Columbus on 28 days during May. The origin of the ovipositing females must have been from old stubble and a small amount of volunteer wheat in the hay fields. The Wheat Insect Survey starting June 30 will point out over how many counties this increase in the fly has occurred.

- Michigan R. H. Pettit (June 19): An examination in the fields over a small part of the State has not revealed any quantity of the Hessian fly thus far.
- Indiana J. J. Davis (June 21): Reports indicate that the Hessian fly is increasing in some localities, apparently localities where some wheat was sown early last fall. Have been unable to make a survey to determine the exact situation.
- Illinois W. P. Flint (June 18): The spring brood of the Hessian fly has appeared in moderate numbers with occasional fields showing 20 to 30 per cent infestation.
- North Dakota C. N. Ainslie (May 29): The abnormally cold spring has delayed the emergence of the adults and now, when the wheat is growing nicely, the flies are placing third eggs. No fields appear to have escaped and in many fields nearly every plant carries from 1 to 10 eggs or even more. The situation is certainly serious.
- Nebraska M. H. Swenk (May 15-June 15): By the last week in May the spring brood had mostly developed to the mature maggot or puparium condition. In the latter stage they largely remained during the first half of June, comparatively few having emerged as adults to form a second spring brood. Nevertheless, the fly, in connection with the unfavorable weather conditions, has worked very great injury to the winter wheat crop of southeastern Nebraska during the present spring and especially in those counties where late sowing of the wheat was not generally practiced last fall. There are large numbers of small dead stems, and the stools usually show weak vitality where the fly is present, which is in about 20 per cent of the acreage. The center of more serious injury eastwardly seems to be in Dodge, Saunders, Butler, Polk, Platte, Hamilton, Fillmore, Saline, and Jefferson Counties. No organized late sowing movement was conducted in any of these counties, except in Saunders and Fillmore Counties, last fall and in these two counties only a comparatively small percentage of the farmers awaited the fly-free date. The infestation in the early sown fields of these nine counties involves from 9 to 22 per cent of the well-developed stems standing at this time, with an average of from 1 to 3 puparia to the affected stem. The dead smaller early spring growth contains at this time large numbers of puparia which have not as yet given forth their flies. This indicates the possibility of a very heavy midsummer brood. The western area of infestation previously mentioned, extending from Harlan to Red Willow County and north into Frontier, Gosper, and Phelps Counties and south into western Dawson County, is in general similarly affected.
- Kansas J. W. McColloch (June 18): There is a general infestation over the State, which is severe in some sections. Heavy infestations are known to occur in Riley, Morris, Clay, and Decatur Counties. The dry weather in early spring reduced the infestation in the western part of the State. Conditions the last of May and in June were favorable for the fly. (June 19): The Hessian fly situation is not as alarming as we had feared earlier in the year. There is a

general infestation over all the wheat growing section of the State, in some areas reaching a serious proportion. The situation is such that, unless active preventive measures are taken during the summer, we can expect a large amount of damage to fall sown wheat. (June 22) Clumps of wheat received from Oakley had 10 per cent of the stems infested with the Hessian fly.

CHINCH BUG (Blissus leucopterus Say)

- Indiana J. J. Davis (June 21): Because of the excessive rainfall and other unfavorable conditions we anticipate less trouble this year from the chinch bug, at least from the first generation.
- Illinois W. P. Flint (June 18): The rains and cold weather of May have been decidedly unfavorable to the development of this insect. Scattering fields are still found throughout the area infested last year where enough bugs are present to cause serious losses to adjoining crops. It is certain the damage from this insect will not be as heavy as that of last year in most of the areas infested in the State.
- Missouri L. Haseman (June 20): The chinch bug is reported as most threatening in counties of southwestern and west-central Missouri. Heavy rains have influenced the young brood but in central Missouri young red nymphs were appearing June 14. We expect serious trouble to start in the next two weeks if it turns dry. We are receiving many inquiries about barriers and the use of calcium cyanide as a gas barrier.
- Nebraska M. H. Swenk (May 15-June 15): The small grain fields of Richardson, Pawnee, Johnson, Gage, southern Lancaster, Saline, and Jefferson Counties have developed, during the past six weeks, a rather heavy infestation with the chinch bug and at this date many fields show evidences of injury. Pawnee County probably shows the heaviest infestation of this block of counties, at the present time. The infestation is general, however, in the counties along the southern border of the State, west to Furnas County, the bugs becoming gradually more numerous from Jefferson County to Furnas County. It is expected that serious injury will take place in the corn through this entire area after harvest, except in those fields where barrier protections are maintained.
- Kansas J. W. McColloch (June 19): The chinch bug situation is especially alarming, since the bugs are distributed generally throughout the wheat fields of the eastern half of the State. While egg-laying and hatching were delayed by the cool weather early in the spring, there was very little mortality and the young bugs are very abundant in most fields. Fifty per cent of the eggs are parasitized. Fungus is killing old bugs but is not affecting immature stages. Wheat is ripening very fast at the present time and the migration from wheat fields has begun in this State. Undoubtedly there will be severe injury to corn in the next week or two.

Oklahoma E. E. Scholl (June 23): It having been impossible to burn chinch-bug hibernating quarters last fall, this insect carried over very successfully and is now beginning to do very destructive work to row crops in the northeastern part of the State.

GREATER WHEAT-STEM MAGGOT (Meromyza americana Fitch)

Missouri L. Haseman (June 20): The wheat-stem maggot is reported from the northwestern part of the State as serious in some fields.

WHEAT JOINTWORM (Harmolita tritici Fitch)

Tennessee G. M. Bentley (June 17): The wheat jointworm is doing considerable damage to wheat in Greene, Jefferson, and Robertson Counties.

Illinois W. P. Flint (June 18): This insect is very abundant in central and southern Illinois, especially in the western part of the State. S. C. Chandler recently conducted a survey in southern Illinois which showed an average infestation of a little over 21 per cent with occasional fields showing 30 to 40 per cent infestation, an average of 30 per cent of the straw fallen. The outbreak is more general than any which has occurred in Illinois in recent years.

WHEAT STRAWWORM (Harmolita grandis Riley)

Kansas J. W. McCulloch (June 22): Clumps of wheat received from Tribune show 40 per cent of the stems infested. Wheat from Oakley had 50 per cent of the stems infested.

CORN

EUROPEAN CORN BORER (Pyrausta nubilalis Huebn.)

Ohio H. A. Gossard (June 12): On this date none of the larvae of this borer had pupated at the laboratory at Oak Harbor and, evidently, the brood for 1924 is going to appear a week or ten days later than it did in the northeastern part of the State in 1923.

CORN EARWORM (Heliothis obsoleta Fab.)

South Carolina A. F. Conradi (May 22): The corn earworm has done about 60 per cent damage to the early tomato crop at Beaufort.

Georgia J. H. Pressley (May 28): In the vetch field at Fort Valley this pest had taken on the habits of the armyworm.

W. D. Hillis (May 31): This pest was mistaken for the armyworm at Statesboro. (The summer has been cool and backward so as to hinder the development of parasites. - J. D. More.)

H. B. Ralls and J. D. More (June 3): The outbreak at Ashburn was first reported as that of the armyworm. They were so worried in this section that I made a personal trip and found this to be the pest. Trenching and poisoning had been already resorted to. The season was backward and cool and had hindered the development of parasites. Several specimens showed that they were parasitized. Also reported as attacking tomato on June 2 at Pearson, Pitts, and Rochelle, in all cases doing considerable damage.

Georgia

O. I. Snapp (June 20): This pest has been unusually abundant in middle Georgia this year, attacking corn and vetch. In the case of vetch they have assumed armyworm habits and trenches had to be dug around the fields in order to prevent their progress and hold them in check.

Alabama

J. M. Robinson (June 25): The corn earworm has caused some damage to cotton and corn, due to the fact that vetch was not turned under sufficiently early to destroy the developing larvae.

Mississippi

R. W. Harned (May 27): This pest has been seriously damaging large fields of garden beans in the vicinity of Pascagoula, Jackson County. One inspector reports that at least 75 per cent of the beans are infested and that practically every bean pod shows some indication of the work of these worms. These insects first attracted attention about May 15. Individual farmers will lose from \$100 to \$400 because of these insects.

Texas

F. L. Thomas (June 20): There has been extensive infestation on corn and fear is being felt for cotton in Grayson County.

STALK BORER (Papaipema nitela Guen.)

Massachusetts

A. I. Bourne (June 24): The stalk borer is the subject of several reports, its work being on young tomato plants and small corn plants.

Indiana

J. J. Davis (June 21): Reported injuring tomato plants at Evansville June 19. Specimens not over one-third grown.

Kansas

J. W. McColloch (June 18): May 31 worms were killing all corn in some fields in Harper County. June 16 severe injury to corn was reported from Marshall County and to potatoes from McPherson County.

WEBWORMS (Crambidae)

Ohio

H. A. Gossard (June 20): Crambus caliginosellus Clem. was received from Ohio June 3, where it was attacking young corn.

Indiana

J. J. Davis (June 21): Considerable damage is reported to corn by webworms in a field near Delphi on June 20. This field was in sod last year.

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BILLBUGS (Sphenophorus spp.)

Missouri L. Haseman (June 20): A small species of billbug has been reported by a number of growers in the central part of the State.

Kansas J. W. McColloch (June 10): Maize billbugs, Sphenophorus maidis Chittenden, were reported numerous in fields at Marion, most of the injury being on bottom land. (June 12): Sphenophorus callosus Oliv. has destroyed one-half of the corn in a field near Olathe.

SUGAR-CANE BEETLE (Eutheola rugicens Lec.)

Tennessee G. M. Bentley (June 17): Several reports have been received of adult injury to growing corn caused by the carrot beetle or sugar-cane beetle.

Mississippi R. W. Harned (June 20): Complaints in regard to the rough-headed corn stalk-beetle have been received from Montgomery, Neshoba, Yazoo, Carroll, and Oktibbeha Counties.

BANDED FLEA-BEETLE (Systema taeniata Say)

Indiana J. J. Davis (May 24): Received May 24 to June 5, from Veedersburg and west to Frankfort, Fairmount, and Fort Wayne on the north and east. The larvae burrowed into the roots and developing shoot, before and after it appeared above ground. All records show it to be common only in fields which were in weedy sod or other weedy ground last fall. The most severe injury is in spring plowed land. The species has not been positively identified as it has not been reared.

Illinois C. C. Compton (June 10): The larvae of the pale-striped flea-beetle has severely injured sprouting corn in the field in Kendall and LaSalle Counties. Replanting was necessary in fields totaling 68 acres. (June 18): The larva of this insect has been found injuring corn in a number of fields in the central and northern parts of the State.

SEED-CORN MAGGOT (Hylemyia cilicrura Rond.)

New York C. R. Crosby (June 17): At Auburn 14 acres of corn were so badly injured by Phorbia fusciceps that it will be necessary to plow it up and replant.

Ohio T. H. Parks (June 23): Damage to corn occurred generally from this pest, which destroyed germinating kernels of corn during May. Cold, wet weather greatly delayed germination and growth of the seedling.

Michigan R. H. Pettit (June 19): We are suffering from an attack of the bean maggot, both in beans and in sprouting corn. While this attack is not nearly so serious as the one a few years ago yet it is fairly common. So far as I can determine at this stage of the game, men who seeded their land early, who seeded at a depth of one-half inch, and who used rotted manure have escaped. Of course, in the case of alfalfa worse roots keep the maggot so much longer. Fall plowing is necessary.

Indiana

J. J. Davis (May 28): A large number of inquiries relative to injury to corn, together with specimens of the seed-corn maggot, have been received from Columbus and Veedersburg. The cold, wet season has no doubt been partly responsible for the abundance of this insect. Old seed has been partly responsible in some instances. (June 21): It was common in planted corn seed the past month, reports coming in from May 26 to June 14 and the infested area ranging from Columbus on the south, Veedersburg and Fowler on the west, east and north to Winamac and Rochester. The cold, wet spring which delayed germination was largely responsible. In some cases it was noticeable that old corn was more severely attacked than last year's corn.

Illinois

W. P. Flint (June 18): Considerable injury has been occasioned by this insect throughout the central and northern parts of the State.

Iowa

Carl J. Drake (May 28): The seed-corn maggot has destroyed a field of corn and beans near Newton, Jasper County. In the lima beans as many as 76 maggots were found in a single bean. In corn the number varies from 2 or 3 to a dozen maggots per kernel. The cold weather has been unfavorable for the development of the corn and very favorable for the feeding of the maggots in the kernels.

Nebraska

M. H. Swenk (May 15-June 15): During the last week in May reports of injury to planted seed corn by the seed-corn maggot were received from Cedar, Dakota, Saunders, Thayer, and other Counties lying east of the 98th meridian. This injury was, no doubt, induced by the very cool, backward spring, which greatly slowed up the germination of the planted corn.

CORN ROOT-APHID (Aphis maidi-radicis Forbes)

Nebraska

M. H. Swenk (May 15-June 15): During the last half of May reports were received indicating a considerable prevalence of the corn root-aphid in Franklin and Harlan Counties, attended by a considerable thinning out of the stand in many cornfields because of this attack.

ALFALFA AND CLOVER

ALFALFA WEEVIL (Phytonomus posticus Gyll.)

Utah

I. M. Hawley (June 23): The alfalfa weevil is appearing again in injurious numbers in Salt Lake, Millard, and Utah Counties and in some other places along the southern limit of the insect's spread. It is more abundant over its entire range than it has been at any time during the last three years.

MORMON CRICKET (Anabrus simplex Hald.)

Wyoming F. W. Poyd (May 28): Nymphs in the third and fourth instars are doing considerable damage to young alfalfa plants in Hot Springs County. Alfalfa 10 to 12 inches is stripped bare of leaves. The county is organized and is having very good results with poisoned bran mash.

Idaho and Utah I. M. Hawley (June 23): The Mormon or army cricket is again abundant in Franklin (southern Idaho) and in the Uinta Basin, Utah. The insects are nearly full grown and migrating at the present time.

GARDEN WEBWORM (Loxostege similalis Guen.)

Iowa Carl J. Drake (May 28): The adult of the garden webworm has been taken in Page and Mills Counties this spring (May 13).

Nebraska M. H. Swenk (May 15-June 15): During the first week in June the first brood of the year of the alfalfa or garden webworm put in its appearance in the alfalfa fields and was reported doing obvious injury in Washington and Madison Counties in a few fields.

GREEN CLOVERWORM (Plathypena scabra Fab.)

Mississippi R. W. Harned (June 20): An insect that is probably the green cloverworm has been reported as seriously damaging alfalfa in Bolivar County.

SIX-SPOTTED LEAFHOPPER (Cicadula sexnotata Fab.)

Nebraska M. H. Swenk (May 15-June 15): During the third week in May the six-spotted leafhopper was reported badly injuring alfalfa, especially young alfalfa that had been sown with oats, all through Thurston County, and also as injuring barley in Hamilton County. These injuries apparently ceased, however, before the end of May.

PEA APHID (Illinoia pisi Kalt.)

Michigan R. H. Pettit (June 3): I am informed that the alfalfa fields were found to be infested on the 28th of May with the green pea louse. The weather here in Michigan has been cold and wet almost continuously up to the present time.

Utah Geo. F. Knowlton (June 10): The pea aphid is numerous in most alfalfa fields examined in Logan and surrounding territory but the damage is not noticeable.

BUMBLEBEES

Ohio

H. A. Gossard (June 20): Our agronomists report that bumblebees are very scarce this season and that the first cutting of clover can hardly be expected to develop a normal supply of seed. It is also possible that they will not have replenished their number sufficiently by midsummer or fall to insure a seed crop from the second cutting of clover. The excessive rainfall is supposed to have drowned out many of the nests.

CLOVER-LEAF WEEVIL (Hypera punctata Fab.)

Ohio

H. A. Gossard (May 29): The clover-leaf weevil was received from Brooklyn Station May 29, where it was reported to be very numerous on a field of plowed sod which was to be planted to corn.

SOYBEAN

A BLISTER BEETLE (Epicauta lemniscata Fab.)

Louisiana

J. W. Ingram (June 4): Striped blister beetles appeared in large numbers during the first days of the month and began feeding on the young soybean plants around Crowley. In some fields the young plants were completely defoliated.

COWPEA

COWPEA CURCULIO (Chalcodermus aeneus Boh.)

Georgia

O. I. Snapp (June 10): This pest is very abundant and injurious in Hancock County this year on cowpeas.

SORGHUM

KAFIR ANT (Solenopsis molesta Say)

Kansas

J. W. McColloch (June 10): At Eskridge it has been necessary to replant sorghums three times because of this insect. Damage has also been reported from Eureka.

VETCH

FALL ARMYWORM (Laphygma frugiperda S. & A.)

Maryland

P. D. Sanders: An outbreak has occurred on the Eastern Shore of this State.

South Carolina

J. A. Berly (June 12): Attacking vetch at Union. This is the first reported outbreak we have received. No serious damage was reported.

FRUIT INSECTS

APPLE

GREEN APPLE APHID (Aphis pomi DeG.)

- New York C. R. Crosby and assistants: On May 24, at Sodus, Wayne County, stem-mothers were giving birth to living young, while in Orleans County, on June 14, they were very numerous. At Honeoye Falls they were abundant on apple "buds" in the nursery, and plentiful on one-year quince "buds."
- South Carolina J. A. Berly (June 16): This insect has caused considerable curling of the leaves in the commercial orchards in the Walhalla section.
- Indiana B. A. Porter (June 23): Within the last few weeks serious infestations have developed in some orchards at Vincennes, while others are comparatively free from aphids.
- J. J. Davis: Some young orchards in central Indiana are heavily infested.
- Utah Geo. F. Knowlton (May 27): The green apple aphids are numerous and doing some damage in most of the orchards now.

APPLE GRAIN APHID (Rhopalosiphum prunifoliae Fitch)

- Utah Geo. F. Knowlton (May 27): Apple grain aphids are numerous and doing some damage in most of the orchards now.

ROSY APPLE APHID (Anuraphis roseus Baker)

- Massachusetts A. I. Bourne (June 24): This species is more abundant and more generally distributed than for the last several years. The winged migrants are just beginning to be found in numbers.
- Connecticut W. E. Britton (June 9): Scarce in most orchards where I have been but quite abundant at Stamford and Wallingford. (June 24): These insects now seem to be present in moderate numbers in nearly every orchard, and are more abundant than they were last month.
- New York C. R. Crosby and assistants: This insect is showing up in injurious numbers in Dutchess County in many orchards, and is more common than usual in Ontario County this spring. In Onondaga County this insect is still being found through most of the orchards of the county, while the second generation is commencing to appear in considerable numbers. At Honeoye Falls it is abundant on apple "buds" in the nursery. It is becoming quite numerous in Ulster County, but is most in evidence on

trees receiving oil emulsion at the delayed dormant period instead of lime-sulphur and nicotine, while in Columbia County it is causing considerable damage.

Ohio

H. A. Gossard (June 7): The rosy apple aphid was received on this date from Cincinnati where it was found on apple.

Indiana

P. A. Porter (May 26): This species was rather scarce earlier in the season at Vincennes, but is now becoming more abundant. Winged migrants are beginning to appear, and many syrphid larvae and eggs as well as lady beetles are being observed.

J. J. Davis (June 21): Not as abundant as in 1923, and although common in some orchards, it became common too late to do great damage to fruit.

Missouri

L. Haseman (June 20): The rosy apple aphid is quite serious in some orchards of the State. Aphid parasites are doing good work on control.

CODLING MOTH (Carpocapsa pomonella L.)

Indiana

B. A. Porter (May 26): Moths have been emerging in very small numbers since May 10, at Vincennes, but a few individuals have not yet pupated. (June 23): First first-brood, larva observed leaving fruit on June 22.

J. J. Davis (June 21): Emergence over a long period this spring on account of the cool, wet season.

Illinois

W. P. Flint (June 18): The first-brood adults of the codling moth emerged very late and have been further retarded by cold weather since emergence. This brood will be extremely light judging by present indications. Not over 2 per cent of the unsprayed apples in southern Illinois orchards are showing infestation at the present. First-brood adults are still emerging in central Illinois.

Missouri

L. Haseman (June 20): Are later than normal. Few larvae are over half grown but most of them less than half grown. Brood light in central part of the State. Continued rains have hindered thorough spraying in many orchards.

FRUIT-TREE LEAF-ROLLER (Cacoecia argyrospila Walk.)

New York

C. R. Crosby and assistants: On May 17, in Columbia County, larvae were observed in small numbers, while in Ontario County on May 24, eggs were hatching, and by May 29, about 75 per cent of the eggs hatched. In Orleans County eggs were also hatching quite freely, and newly hatched larvae were observed for the first time this season. A few larvae have been observed in Onondaga County, while in Chautauqua County this insect was showing up in increasing numbers.

- Ohio H. A. Gossard (June 13): This insect was attacking orchard trees in Delaware on this date.
- Utah Geo. F. Knowlton (June 18): Fruit-tree leaf-rollers in Logan are mostly in the pupa stage, with some moths emerging, and some are still in the larval stage.
- I. M. Hawley (June 23): The fruit-tree leaf-roller is not general in its spread in Utah, but in some places it is causing a great deal of loss. In Iron, Utah, and parts of Boxelder and Cache Counties its injury is very severe, and it is present in noticeable numbers in Salt Lake and Davis Counties. At present the insect is mostly in the pupa stage.

APPLE AND THORN SKELETONIZER (Hemerophila pariana Clerck)

- Massachusetts A. I. Bourne (June 24): The apple and thorn skeletonizer is beginning to make its appearance, and has been noted in Amherst and vicinity for about a week. Some fruit growers have felt it necessary to spray young trees, which up to now it has not been necessary to give any attention to.
- New York C. R. Crosby and assistants: The insect is getting well under way and there are prospects of a heavy infestation in Ulster County; (May 29): Larvae are found in some orchards in Dutchess County but not very numerous to date, while in Albany County eggs are just beginning to hatch.

A BUD MOTH (Recurvaria crataegella Busck)

- Utah I. M. Hawley (June 23): Was found working in buds of apple in Boxelder County, near Garland. This is the first time it has been noted in this State. The work is similar to that of the bud moth.

TENT CATERPILLAR (Malacosoma americana Fab.)

- Massachusetts A. I. Bourne (June 24): General dispersal of larvae began to occur about June 5--9. Almost invariably this species was found to be still on the increase and to have been present in larger numbers generally throughout the State than last year. Mr. Putnam, county agent of Franklin County, reported that in Greenfield the apple tent caterpillars, as they neared maturity, in one case were observed to be crawling away from a hedge row of wild cherries, which they had nearly defoliated, across a considerable strip of open, plowed ground, and had begun to feed on a small planting of strawberries, working in from the side next to the wild cherries with considerable rapidity. These young plants, set out last fall, were throwing out runners quite abundantly before the attack and seemed to be particularly attractive to the caterpillars, and the larvae were threatening to do considerable damage if unchecked. Within a few days they had completely defoliated a considerable area of the bed.

New York C. R. Crosby and assistants: Very plentiful this year and may be seen on practically all roadsides trees and in practically all orchards in Suffolk County, while it is also observed quite plentifully in neglected orchards in Albany County on roadside trees.

Fred N. Schott (June 14): On Long Island this insect is found in considerable numbers in some orchards.

New Jersey Fred N. Schott (June 14): In the northern half of New Jersey this insect is found in considerable numbers in some orchards.

Maryland J. A. Hyslop (June 1): Tents of tent caterpillars are more numerous than any year in the past five years at Avenel. In the McSeeney orchard they average 1 tent per tree on apples, and are seriously defoliating some trees.

FALL CANCKERWORM (Alsophila pometaria Harr.)

Connecticut W. E. Britton (June 9): Many trees stripped. Excrement dropping made a noise like rain. Some larvae nearly full grown, others only half-grown, both green and dark-gray larvae present, in the vicinity of Greenwich, Stamford, and New Haven.

FALSE APPLE RED BUG (Lygidea mendax Reut.)

Connecticut W. E. Britton (June 11): Young fruit badly scarred and punctured, at Danbury. Observed work at Wallingford, June 16; less abundant around New Haven as compared with an average year.

New York C. R. Crosby and assistants: Unusually abundant in Orleans County. Are abundant in scattered orchards in Wayne County, but apparently occur in smaller numbers than last year; in Columbia County they do not appear to be very numerous. In Dutchess County this insect was rather numerous in a few orchards and found in small numbers in Nassau County. They are hatching rather late in Rockland County, but appear to be quite numerous. In Ulster County they are rather widely distributed but only two heavy infestations were observed. All are in the second nymphal stage.

Virginia W. J. Schoene (May 31): This pest seems to be gradually invading the apple section of the Shenandoah Valley from the North. It is serious in some large orchards at Winchester.

Indiana B. A. Porter (May 27): A moderate infestation noted in a neglected orchard at Vincennes. Bugs in the late fourth instar. (June 23): Light infestations noted in several orchards in Knox, Daviess, and Vanderburg Counties. In the first two counties mentioned, adults have been captured. In Vanderburg County, characteristic injury was noted, but no adults were found.

Kentucky

B. A. Porter (June 10): A rather severe infestation noted in an isolated orchard near Henderson, Ky. On the above date the bugs were mature. Another severe infestation has been reported 12 miles south of Henderson.

A LEAFHOPPER (Cicadella hieroglyphica Say)

Missouri

A. C. Burrill (May 24): An apple orchard was so badly attacked by this species that the county agent called upon me for a relief measure. Determination of this insect was made by W. L. McAtee.

LEATHOPPERS (Jassidae)

Massachusetts

A. I. Bourne (June 24): Leafhoppers are particularly prevalent this year. The pest has been practically reduced to a minimum in those orchards where the nicotine was used. In many cases it is hard to find any amount of material damage of these insects where careful attention was given in the calyx application. In other orchards where no particular attention was given to these insects when the calyx spray was put on, the pest has multiplied to an alarming extent. Although not positively identified it is apparently Empoasca rogae. Adults began to appear June 16.

Utah

Geo. F. Knowlton (June 7): Leafhoppers are becoming numerous on apple trees and rose bushes. Most of them are not yet adults.

New York

C. R. Crosby and assistants: In Nassau County this insect is appearing in great numbers, and atodus, Wayne County, it is hatching quite rapidly in the orchards. In Columbia County a few adults have been observed and are beginning to appear quite commonly in Ontario County, also appearing very commonly in Ulster County.

BUFFALO TREEHOPPER (Ceresa bubalus Fab.)

Utah

Geo. F. Knowlton (June 7): The buffalo and other treehoppers are doing considerable injury to some of the apple and peach orchards in Cache and Weber Counties. One orchard especially had a great deal of damage done to young peach trees set out two years ago, the scars covering practically all of the surface of the young trees. Usually the worst damaged orchards are being used for raising alfalfa.

A ROSE CHAFER (Macrodactylus angustatus Beauv.)

Georgia

H. H. Wright (May 24): Reported as doing considerable damage to apple at Ellijay.

APPLE FLEA-WEEVIL (Orchestes pallicornis Say)

New York

C. R. Crosby and assistants: In Onondaga County this insect is reported doing considerable damage in one orchard.

Indiana

J. J. Davis (June 21): Has been reported in conspicuous numbers in the southern third of the State.

APPLE TWIG-BORER (Amphicerus bicaudatus Say)

Nebraska M. H. Swenk (May 15-June 15): Apple twigs considerably injured by the apple twig-borer were sent in during the last week in May from Saunders County.

EUROPEAN RED MITE (Paratetranychus pilosus C. & F.)

Massachusetts A. I. Bourne (June 24): The European red-mite is very generally distributed, and seems to be increasing rapidly where measures for its control have not yet been put into effect.

Connecticut Philip Garman (June 24): Very few of these insects have been noticed this year as compared with an average year.

Ohio H. A. Gossard (June 20): An orchard of Damson plums that was very badly infested last year with Paratetranychus pilosus was given a dormant spray of miscible oil (one of the proprietary paraffin miscible oils) and is so clean of mites that it is almost impossible to locate even a single individual.

PEAR

ZIG-ZAG PEAR BORER (Agrilus sinuatus Oliv.)

Connecticut M. F. Zappe (May 25): Several old trees have been killed by this insect and had to be removed at Shelton.

PEAR PSYLLA (Psylla pyricola Foerst.)

Connecticut Philip Garman (June 24): Abundant in a few orchards at Southington; also reported from Hebron.

New York C. R. Crosby and assistants: The pear psylla is rather numerous in Ontario, Monroe, Onondaga, Orleans, and Genesee Counties, and it is also reported present in Wayne, Niagara, and Ulster Counties in noticeable numbers. Eggs were generally beginning to hatch during the middle of the month.

Ohio H. A. Gossard (June 12): Young larvae of the pear psylla were observed on the leaves of pear at Waterville on this date. The pear trees were quite discolored with sooty fungus last fall but were sprayed with scalecide for the dormant spray and with lime sulphur and arsenate of lead for the petal-fall spray. At the present time it is very difficult to find any larvae at all.

PEAR-LEAF BLISTER-MITE (Eriophyes pyri Pgst.)

New York C. R. Crosby and assistants: Injury showing up in most orchards to a slight degree in Columbia County.

Utah Geo. F. Knowlton (June 7): The pear-leaf blister-mite work is showing up around the State now. Only bad in a small percentage of the orchards, and in certain varieties of trees.

PEAR MIDGE (Contarinia pyrivora Riley)

New York C. R. Crosby and assistants: Observed for the first time in Columbia County, on May 31; while on June 7 the insect was certainly a factor here. The insect and the infested fruits can easily be found in most orchards and in some the damage is serious. In Ulster County, on May 22, Bonc variety was found infested. In Dutchess County the first larvae were observed on May 23, and by June 14 it was found to be rather general in most orchards.

PEACH

ORIENTAL PEACH MOTH (Laspeyresia molesta Busck)

Connecticut Philip Garman (May 24): First signs of twig injury noticed on May 23, in Fairfield County. Apparently less abundant than last year.

Maryland A. L. Quaintance (June 30): Not nearly as bad as last year in Montgomery County.

Georgia J. D. More (June 4): Within the locality of Valdosta this insect was reported attacking peach twigs and fruit.

PIN-HOLE BORER (Monarthrum fasciatum Say)

Indiana B. A. Porter (June 23): In late May began attacking peach trees which had been killed or weakened by the winter at Vincennes. Appeared before the shot-hole borer.

TWELVE-SPOTTED CUCUMBER BEETLE (Diabrotica duodecimpunctata Fab.)

Georgia Oliver L. Snapp (June 11): Injury to foliage of one-year-old peach trees by this insect was severe enough in one orchard to warrant control measures at Fort Valley.

BUMBLE FLOWER BEETLE (Bombus inda L.)

South Carolina J. A. Barly (June 16): One specimen of this insect was received and reported as damaging the fruit on several peach trees, early variety.

GREEN PEACH APHID (Myzus persicae Sulz.)

Nebraska M. H. Suenk (May 15--June 15): In south-central Nebraska there have been reports of the green peach aphid being numerous on peach foliage.

Utah Geo. F. Knowlton (May 27): The green peach aphid is found commonly on peaches this spring. It was collected from 18 different plants in this State last summer, and seems to be common and often doing damage in the gardens.

PLUM CURCULIO (Conotrachelus nemophar Hbst.)

Massachusetts A. I. Bourne (June 24): The plum curculio was unusually late in making its appearance this year. Here at Amherst there was no sign of the adult until the 9th of June. This date was approximately a week, or slightly over, later than the calyx spray of apples. Thus far we have seen very little scarring of fruit caused by this insect. Under date of June 17, Mr. Farrar of Middlesex County reports finding very few scars as yet. Mr. Calkins of northern Worcester County reports the approximate date of first appearance as around the 12th to 14th for this particular section, and reports from Marlboro in the central or southern part of the county make this date around the 9th and 10th. In isolated orchards the pest has been doing considerable damage but generally throughout the county does not seem to be quite as severe as last year. Mr. Fiske, another grower in Worcester County, reports finding no visible evidence of injury by the curculio up to the 14th of June. Mr. Gould, in the western part of Hampshire County, reports having collected the adults beginning about the 8th or 10th of June, and reports that up to the present time damage to the fruit by the stings has been very slight.

Connecticut M. P. Zappe (June 24): Unsprayed crab apples nearly 100 per cent injured. Curculios appeared a little earlier than usual this year at Hamden.

Delaware C. O. Houghton (June): Apples, especially, have been badly injured by this insect in this section (Newark) and a heavy drop of fruit has occurred of late.

Georgia Oliver I. Snapp (June 14): The peach crop is remarkably free from curculio injury this year, and is the cleanest since 1918. Early varieties are now moving free from curculio damage at Fort Valley.

Missouri L. Haseman (June 20): Has been abundant in the central part of the State; cherries, plums, and apples show serious injury. In south cherries larvae are about one-half grown.

CHERRY LEAF-BEETLE (Galerucella cavicollis Lec.)

Michigan R. H. Pettit (June 24): Receiving daily numbers of this insect from the cherry belt of the State. The cherry belt extends up the northern half of the west coast and into the Upper Peninsula. Galerucella seems to be more numerous than in previous years.

TWO-SPOTTED ANOMALA (Anomala binotata Gyll.)

Nebraska M. H. Swenk (May 15-June 15): During the last week in May the beetle was complained of as eating the leaves and gnawing at the young fruits of cherries in Fillmore County.

CHERRY APHID (Myzus cerasi Fab.)

- New York C. R. Crosby and assistants: Present in considerable numbers in Columbia County on June 14, and becoming common on terminal growth in Ulster County on sour cherry. At Honeoye Falls it is severe on Black Tartarian one-year buds, while at Milan young trees are badly infested.
- Ohio H. A. Gossard: This insect was received on May 29, from Killbuck on sweet cherry, and on June 17 from Mt. Vernon on sweet cherry. I have observed it several times during the last month to be rather numerous on sweet cherry at Wooster.
- Indiana J. J. Davis (June 21): Common in some young cherry orchards in central Indiana on June 19.
- Nebraska M. H. Swenk (May 15-June 15): During latter May and early June the cherry aphid was present on cherry trees in great abundance everywhere.
- Utah Geo. F. Knowlton (June 10): The cherry aphid is distributed over the State, but so far this year little real damage has been noted.

PLUM

PLUM APHID (Hysteroneura setariae Thos.)

- Mississippi R. W. Harned (May 27): The rusty plum aphid has attracted considerable attention in the State this spring, as it usually does at this time of the year. Specimens have been received from almost every section of the State.
- Nebraska M. H. Swenk (May 15-June 15): During the latter part of May and early June the rusty brown plum aphid was present on plum trees in great abundance everywhere.

SAY'S BLISTER BEETLE (Bomphopoea sayi Lec.)

- New York C. R. Crosby (June 13): Doing considerable damage to plum trees at Newark, while at Honeoye Falls, Mr. A. L. Pierstorff reports this insect eating up two rows of Sapa plums.

RASPBERRY

RASPBERRY FRUIT WORM (Byturus unicolor Say)

- New York C. R. Crosby and assistants: Quite prevalent and a few men have already sprayed for it in Chautauqua County, while in Ulster County, on May 22, they were observed emerging on this date, and by June 7 were found to be very numerous in most plantings.

GRAPE

ROSE CHAFER (Macroductylus subspinosus Fab.)

- Massachusetts A. I. Bourne (June 24): Within the last week, the first specimens of the rose chafer began to make their appearance. Within a matter of a day or two, roses, grapes, etc., have been found to be literally covered with them.
- Connecticut M. P. Zappe (June 24): First beetles were observed on June 16, at Orange, Milford, and Hamden. They appear to be more plentiful than usual as compared with an average year.
- Delaware C. O. Houghton (June 24): Much less injury has been caused by this pest than is usual here at Newark.
- Ohio E. W. Mendenhall (June 26): Rose beetles are doing great damage to apples, cherries, and grapes in Knox County. Spraying arsenate of lead mixed with molasses seems to be effective.
- Indiana J. J. Davis (June 21): Reported from Vanderburg County June 11, and from other southwestern Indiana counties about the same time, injuring fruit and foliage of peach, apple, cherry, blackberry, and grape. They had been first observed at Evansville in Vanderburg County on May 30, injuring peach. Farther to the east, especially in Harrison County, poultrymen experiencing much trouble, the young chickens dying as a result of feeding on rose beetles which are very abundant. In a letter dated June 18, County agent Clunie of Corydon, Harrison County, writes: "Our county is being absolutely overrun with rose beetles. They are literally eating the cherries and attacking apple trees and walnut trees and it seems in sections where the outbreak is worst that they are eating on all trees as well as roses and shrubs. Blackbirds and doves and other birds which are eating the insects are being found dead in large numbers. (June 26): The rose chafer is now appearing at Elkhart and other northern Indiana points, damaging apples, plums, grapes, cherries, currants, etc."
- B. A. Porter (June 23): Serious local outbreaks reported early in the month from Evansville and Princeton near the above localities.
- Tennessee G. M. Bentley (June 17): Specimens have been received from 25 different localities representing eastern, middle, and western parts of Tennessee. Adult beetles eating partly grown apples and peaches, also feeding upon cherries just about ready to be picked. Rose bushes in some 5 different centers have been reported seriously damaged by this insect. In Campbell County several hundred young chickens were killed by eating this insect.

Nebraska M. H. Swenk (May 15-June 15): In the sandhill counties the rose chafer appeared in somewhat supernormal numbers during the first week in June.

GRAPE LEATHOPPERS (Erythroneura comes Say)

New York C. R. Crosby and assistants: Has shown up in considerable numbers in certain places in Chautauqua County in the last two days, June 14.

CURRENT

GOOSEBERRY FRUITWORM (Zophodia grossulariae Riley)

Mississippi R. W. Harned (May 27): An insect thought to be the gooseberry fruitworm has attracted some attention as a pest of the blueberry at Poplar, Pearl River County.

CURRENT APHID (Myzus ribis L.)

New York C. R. Crosby and assistants: Few of these insects are appearing in Chautauqua County on May 24, while in Ontario County they appeared rather commonly on the opening leaves. In Ulster County they were common and in some patches rather serious on June 7.

Delaware C. O. Houghton (June): This plant-louse is more abundant than usual here at Newark, and causing serious injury to some plants.

Ohio H. A. Gossard (June 10): Received from Black Run on current on June 10, and from Mt. Vernon on June 17.

Indiana J. J. Davis (June 21): Common throughout the State, reports being received May 22 to June 5.

Nebraska M. H. Swenk (May 15-June 15): An almost unprecedented abundance for Nebraska of the current aphid has occurred.

Utah Geo. F. Knowlton (June 18): The current aphid is doing considerable damage to the red currants in Smithfield, nearly all leaves being rolled and discolored, with the under side of the leaves nearly covered with wingless and a few winged forms.

IMPORTED CURRENT WORM (Pteronidea ribesi Scop.)

New York C. R. Crosby and assistants: Worms were found hatching and feeding in Ulster County on May 17, and by the 29th of May infestations were scarce and light.

Nebraska M. H. Swenk (May 15-June 15): The imported current worm was quite injurious, as usual, to currants and gooseberries during latter May and the first week in June.

CURRENT STEM-GIRDLER (Janus integer Norton)

- Michigan R. H. Pettit (June 19): The current stem-girdler has appeared in one or two places and the one located near Grand Rapids has girdled off the tips of 2 acres of currants.

PECAN

HICKORY SHOOT CURCULIO (Conotrachelus aratus Germar)

- Mississippi R. W. Harned (May 27): An insect that is thought to be the hickory shoot-curculio has been serious enough to attract considerable attention at several points in the State. Specimens have been received from Jones, LeFlore, and Lincoln Counties. This insect has not attracted attention as a pecan pest in previous years.

PECAN-LEAF CASE-BEARER (Acrobasis nebulella Riley)

- Georgia N. P. Peebles (May 17): Reported from Macon, Bainbridge, and Preston attacking pecans.

- Mississippi R. W. Harned (May 27): Quite a few complaints have been received from southern Mississippi during the past few weeks in regard to the pecan case-bearer damaging pecan trees. Apparently these insects are much more numerous than usual in the region from 30 to 60 miles north of the Gulf Coast.

Phylloxera spp.

- Mississippi R. W. Harned (June 20): Are apparently more numerous on pecan trees throughout this State this year than during any recent year. Complaints in regard to them are being received almost every day from different parts of the State.

PHYLLOXERA GALLS (Phylloxera carya-ren Riley)

- Mississippi R. W. Harned (May 27): These galls have attracted much attention in different parts of the State during the past few weeks. The only specimens that have so far been determined definitely were determined by T. L. Guyton, Harrisburg, Pa., as Phylloxera carya-ren.

FALL WEBWORM (Hyphantria cunea Dru.)

- Mississippi M. R. Smith (June 17): The fall webworm is beginning to show up slightly on pecan trees at Atta Bona. Judging from the size of the caterpillars seen, their generation is in its earliest stages.

A. LEAF-BEETLE (Colaspis favosa Say)

- Mississippi R. W. Harned (June 20): The leafbeetle Colaspis favosa was found seriously injuring pecan leaves in a nursery at Pascagoula on June 15.

BLUEBERRY

A MOTH

Alabama

J. M. Robinson (June 25): The blueberry industry has been developing in southern Alabama in the last two years. It has one moth that is causing a small percentage of damage to the fruit. We have not yet been able to determine definitely the species. As soon as we breed out some adults, we will then be able to report more definitely on this insect.

TRUCK - CROP INSECTS

MISCELLANEOUS FEEDERS

PAINTED LADY BUTTERFLY (Vanessa cardui L.)

Indiana

J. J. Davis (June 25): Reports of abundant occurrence on Canada thistle have come from Howard, St. Joseph, La Porte, Tippecanoe, Benton, and Whitley Counties, in some cases apparently cleaning up infestations. I do not imagine that they destroyed the infestations but doubtless they did prevent seeding in some cases. First reports were received June 23 and others yesterday and today.

Arizona

V. L. Wildermuth (June 16): In the June 1 number of the Insect Pest Survey Bulletin I notice with considerable interest E. A. McGregor's description of the migration of the painted lady butterfly. It will be of interest to place upon record the fact that the flight of this butterfly also occurred through southern Arizona in approximately the same numbers as estimated by Mr. McGregor. For a period of five days following April 8 the air was full of this painted lady at all times, the general direction of flight being northwest. Observations were made at Tempe, Tucson, and Yuma, and at all these places the numbers seemed to be about the same.

I was interested in knowing that Mr. McGregor thought that possibly the source of this migration was either the foothills of the Sierras or the Sierras proper. We have been suspicious that the source was somewhere in central Mexico. It would, indeed, be interesting to know the exact source of this unusual flight.

CUTWORMS (Noctuidae)

Maine

E. M. Fatch (June 3): A report of cutworms was received from Skowhegan stating "Destroying everything in the garden." No specimens were submitted. (June 20): One nearly grown larva of Agrotis ypsilon was sent from Old Orchard with the report "The ground seems to be well filled with them. They eat my cucumbers, peas, and beans."

- Connecticut M. P. Zappe (June 24): Many complaints of cutworm injury to practically all garden truck have been received from New Haven County.
- New York A. G. Newhall (May 20): Cutworms were first observed on this date attacking truck crops at Williamson, Wayne County.
- K. E. Paine (June 14): Climbing cutworms are very numerous all through the grape belt in Chautauqua County and are doing much damage to young grapes and tomatoes.

POTATO AND TOMATO

TOMATO SUCK-FLY (Macrolophus separatus Uhler)

- Texas E. M. High (June 13): On my recent trip to Texas I found that the tomato suck-fly has extended its range the past year and that it is just getting into the tomato-growing district of eastern Texas, although Mr. Del Curto says that it has been in Austin more than two years. Mr. Del Curto was in the Valley on his way to Mexico and informed me that it was almost impossible to grow tomatoes about Austin on account of the suck-fly. I went to College Station to see what they had on the distribution of this pest. They report it as far east as Troup.

IMBRICATED SNOUT-BEETLE (Epicaerus imbricatus Say)

- Tennessee G. M. Bentley (June 17): Several reports were received accompanied by specimens and injury to young tomato plants.

TOMATO FRUITWORM (Heliothis obsoleta Fab.)

- Mississippi H. W. Allen (June 23): Heliothis obsoleta has been doing more damage to green tomatoes at A. & M. College. In one block examined 2 per cent had been destroyed; in another, somewhat more mature, 12 per cent were destroyed.
- Louisiana C. E. Smith (June 10): I do not believe that I have ever observed this insect as bad on tomatoes at Baton Rouge as it is this year.

CABBAGE

CABBAGE MAGGOT (Hylemyia brassicae Bouché)

- Connecticut W. E. Britton (June 24): This pest is attacking cabbage at Vernon, Hebron, Hamden, New Haven, and Ellington. The abundance is about as usual.
- New York C. R. Crosby and assistants: The cabbage maggot is not as serious as last year in Ontario County and but few flies have been observed in Wayne County. In Nassau County there was heavy oviposition during the latter part of May.

Ohio H. A. Gossard (June 4): The cabbage root maggot was received from New Comerstown June 4 on cabbage. I have also observed it to be rather plentiful on cabbage and cauliflower around Wooster.

STRAWBERRY

STRAWBERRY LEAF-ROLLER (Ancylis comptana Froehl.)

Kansas J. W. McColloch (June 11): Many leaves of strawberry are infested in an acre patch at Stafford.

STRAWBERRY FLEA-BEETLE (Haltica ignita Ill.)

Maine E. M. Patch (May 29): A report of flea-beetles was received from Gorham stating that "They are coming from my old bed to my new set-out one." This is evidently a heavy infestation.

New York G. E. R. Hervey (May 16): Flea-beetles were found to be very destructive in some plantings of strawberry in Dutchess County, especially in those where the plants have been set out this year.

STRAWBERRY ROOT-WEEVIL (Brachyrhinus spp.)

Utah I. M. Hawley (June 23): The strawberry crown girdler is working in old strawberry patches throughout the State. It has been sent in from Utah, Cache, Weber, Morgan, Salt Lake, and Boxelder Counties.

Geo. F. Knowlton (June 11): Strawberry root-weevils, Brachyrhinus ovatus L. and B. rufifrons Gyll., have been observed this spring in Logan and Smithfield. Last year they destroyed one patch and damaged many patches in Cache and other counties.

STRAWBERRY WEEVIL (Anthonomus signatus Say)

Maine E. M. Patch (May 29): A single specimen of the strawberry weevil was sent with about 20 strawberry flea-beetles from Gorham. They were evidently feeding in company.

New York G. E. R. Hervey (May 16): Adults were observed on two plantings in Dutchess County and in one case were causing some injury. (May 29): Injury has been very slight this year and very few growers have found it necessary to use control measures.

C. C. Wagoner (May 17): Injury is found quite common in Ulster County. (May 19): Eggs were found on this date. (May 29): Infestations are very light.

A. B. Buchholz (May 24): This pest is reported in one bed though for this time of year in Columbia County they appear to be very scarce. (May 31): While not appearing to be very abundant spray warning was sent out on this date.

Tennessee

G. M. Bentley (June 17): This is a serious pest to cultivated strawberries in eastern and western Tennessee.

ASPARAGUS

CUTWORMS (Noctuidae)

Michigan

R. H. Pettit (June 14): Mr. Harman just got back from a visit to Lake City where he looked into the cutworm matter. He finds that the ground on which the asparagus was planted has light, sandy soil. The land had been in sod for several years until it was plowed in 1921 and planted to corn and in 1922 it was plowed and fertilized with 40 loads of barnyard manure to the acre, planted to asparagus. It is still in asparagus. In 1922 the cutworms were very plentiful, injuring the crop and causing serious loss. The worms have decreased each year quite materially. The damage is done chiefly below the surface of the ground and shows up when the stalk pushes through, then displays the so-called "cripple." It seems that some of the work is done at the surface, or at least that the worms come to the surface at night and travel about, but that they do much of their work beneath the surface. The owner has been able to collect a quart or more of the cutworms during a night by searching with a lantern.

Now about the failure of the bran bait: After a considerable inquiry it develops that they used arsenate of lead instead of white arsenic in making their bait and, of course, it is perfectly natural that it should not work.

I sent them a pound of arsenate of soda and 3 ounces of high-grade banana oil with instructions for making up 20 pounds of bran to find out if that would work. Apparently that did; they used it on another crop which was being attacked by cutworms and the cutworm work ceased immediately after the application of the bait.

BEANS

MEXICAN BEAN BEETLE (Epilachna corrupta Muls.)

South
Carolina

J. A. Berly (June 16): The Mexican bean beetle has appeared in numbers within the past two weeks and is sufficiently injurious to warrant control measures, the principle injury being to snap beans.

N. F. Howard (June 27): Now eastward to a line from York to Aiken County.

Georgia

Neale F. Howard (June 16): The Mexican bean beetle has now been found in a belt extending from Troup and Stewart Counties in the western part of the State across the State to Richmond and Burke Counties, so that now this insect covers practically the northern two-thirds of the State. (June 27): Found $11\frac{1}{2}$ miles west of Thomasville.

- Tennessee G. M. Bentley (June 17): At present it infests 70 of the 95 counties of the State. At present the adults, eggs, and larvae can be found. Adult beetles seem to be doing more injury from eating this spring than previously.
- Ohio H. A. Gossard (June 20): Reported from Chillicothe and Columbus.
- Alabama Neale F. Howard (June 9): Prof. J. M. Robinson reports that a number of specimens have been taken at Auburn, in Lee County. This infestation was reported by Dr. Thomas last year, but the beetles were very scarce.
- Mississippi R. B. Deen (May 30): Beetles were found on 4 new and 2 of last year's places in Tishomingo County. They were all adults, probably the ones that passed the winter in hibernation.
- Neale E. Howard (June 9): Prof. R. W. Harned reports 6 new properties infested at Belmont, in Tishomingo County. This county was found to be infested by the State Plant Board last year and was reported. (June 16): Infestation at Corinth, in Alcorn County.
- R. W. Harned (June 20): The Mexican bean beetle has invaded two new counties during the past month. They have been found on farms in Alcorn and Prentiss Counties. This makes four counties in the northeastern corner of the State that are now infested with this insect. Tishomingo and Itawamba Counties were infested early in 1923.

PEAS

PEA APHID (Illinoia pisi Kalt.)

- Connecticut B. H. Walden (June 19): One field of peas at New Haven badly infested; in two fields no aphids were observed. They are less abundant this year.
- New York L. C. Tyler (May 29): Aphids were observed in small numbers on peas this date in Nassau County. (June 7): Aphids are becoming more numerous and threaten to become serious.
- Wisconsin J. E. Dudley Jr. (June 1): On account of the cool, wet spring the conditions surrounding the Government Field Station at Columbus are quite unusual.
- The pea aphid hatched late in April and has been very slowly increasing and spreading until now it is present in practically all clover and alfalfa fields in this vicinity although none have yet been found on peas. There is an unusual abundance and thorough distribution of the aphid's natural enemies. Ladybirdsbeetles are very thick and in some fields will doubtless control the aphid entirely. On May 31 over one thousand of these beetles were collected with the aphidozer from about one acre of alfalfa. Syrphid flies have put in their appearance. Internal parasites of the aphid are present in unusual numbers for this time of the year, and in places the fungous disease has already killed 30 to 40 per cent of the

With all these enemies at work it begins to look as though the aphid might be held in partial check unless especially favorable weather for the aphid should occur between now and the start of the canning operations.

Excerpt from J. E. Dudley's letter of June 24th: Yesterday we ran the aphidozer through an acre of alfalfa just before it was cut and secured a very interesting collection of many species of insects. **** We recovered 9,867 syrphid larvae of two principal species, 785 coccinellid larvae, and 482 coccinellid adults, making a grand total of 11,134 predators which were actually counted. There were hundreds of very small syrphid larvae which escaped us and probably thousands of coccinellid larvae which it was not possible to find or count. This gives some idea of what the total number of predators in all stages must be in an acre of heavily infested alfalfa. I expect to have this test duplicated later on peas. We have colonized most of these predators in a pea field as heavily infested as any of them are at present in an effort to ascertain whether control by predators is possible when they occur in very large numbers.

Nebraska M. H. Swenk (May 15-June 15): Ornamentals of various sorts have shown a widespread and heavy infestation, especially by Macrosiphum pisi on sweet peas.

Utah I. M. Hawley (June 23): The pea aphid is not numerous so far this year. There are a few on some vines but it is doubtful if there will be any loss from it as peas are now forming pods.

BLACK-LINED CUTWORM (Agrotis fennica Tausch.)

Maine E. M. Patch (May 27): Nearly full-fed larvae were sent in from Maplewood Farm at Wells with the statement that they are destroying peas. These are the first specimens of this species that I have seen in many years.

CUCUMBERS

STRIPED CUCUMBER BEETLE (Diabrotica vittata Fab.)

Massachusetts A. I. Bourne (June 24): First appearance in the eastern part of the State the 15th - 17th of June. Same date noted here at Amherst and vicinity when large numbers of them literally covered the young developing squash and cucumber plants. The severity of attack was more marked than had been noted for several years.

Ohio T. H. Parks (June 23): Very injurious to cucumbers and water-melons in the Scioto Valley. The calcium-arsenate and gypsum dust mixture is being used successfully in controlling them.

Indiana J. J. Davis (June 21): Reports again indicate best control with calcium arsenate and gypsum mixture. They are not as abundant this year as usual.

- Mississippi R. W. Harned (June 20): The striped cucumber beetle has, as usual, been reported as injurious to melons at several points in the State.
- Missouri L. Haseman (June 20): In the central part of the State it has appeared on crops only in the last week, June 14-21.
- Nebraska M. H. Swenk (May 15-June 15): More than usually numerous... is doing serious injury to cucurbits at this time.

MELON APHID (Aphis gossypii Glov.)

- Mississippi R. W. Harned (May 27): The melon aphid has been reported as rather abundant in cucumber fields around Wiggins, in Stone County.

POTATO FLEA-BEETLE (Epitrix cucumeris Harr.)

- Connecticut W. E. Britton (June 24): Flea-beetles are attacking cucumber, squash, tomato, and eggplant at North Haven, Woodstock, Brooklyn, Danielson, Cheshire, Southington, and Plainville.

MELONS

TWELVE-SPOTTED CUCUMBER-BEETLE (Diabrotica duodecimpunctata Fab.)

- Georgia C. V. Shirley (June 2): This insect is reported as very destructive to watermelon at Fayetteville, in Fayette County.

ONIONS

ONION THRIPS (Thrips tabaci L.)

- Iowa Carl J. Drake (May 28): The onion thrips seems to be quite numerous in the vicinity of Ames this spring. This insect did a considerable amount of damage to the onion crop in this State last year.
- Utah I. M. Hawley (June 23): Work of the onion thrips began to appear about June 1 and is quite abundant now in Davis County.

ONION MAGGOT (Hylemyia antiqua Meig.)

- New York E. L. Felix (May 29): A few maggots have been found infesting the old onions in the field at Elba.

- Illinois C. C. Compton (June 12): Maggots are appearing in onions in Cook County in considerable numbers. At this early date the damage is not great.

- Wisconsin J. E. Dudley, Jr. (May 24): General egg laying occurred on May 16 and 17, which were bright and warm. Cull onions used as traps became infested to the extent of two eggs per cull in Racine County. Egg laying has practically been suspended since the 17th, due to cool, rainy weather. No natural enemies have been observed.

tah

I. M. Hawley (June 23): The onion maggot is destroying all onions in some places in Cache County.

BEETS

SUGAR-BEET WEBWORM (Loxostege sticticalis L.)

Montana

J. R. Parker (June 24): Large flights of sugar-beet webworm moths were noted during the first two weeks in June in many localities east of the Divide and, judging from the great numbers of moths, some damage to sugar beets may result from this pest. Aside from grasshoppers and sugar-beet webworm moths, insect pests have been present in unusually small numbers.

tah

I. M. Hawley (June 23): Sugar-beet webworms are appearing in injurious numbers in Utah, Weber, and Cache Counties.

SUGAR-BEET ARMYWORM (Caradrina exigua Hbn.)

tah

I. M. Hawley (June 23): Sugar-beet armyworms are doing considerable damage in Utah County.

SUGAR-BEET ROOT-MAGGOT (Tetanops aldrichi Hendel)

tah

I. M. Hawley (June 23): Sugar-beet root-maggot flies were late in coming out. Eggs are being deposited in large numbers at the present time.

A BEET LEAF-MINER (Pezomyia vicina Lint.)

elaware

C. O. Houghton (June): Beet leaves are very badly infested at Newark this year.

SWEET POTATOES

TORTOISE BEETLES

ississippi

R. W. Harned (June 20): Several species of tortoise beetles have been reported from different parts of the State on sweet potatoes, including Chelymorpha cassidea Fab. Metriona bicolor Fab., Chirida guttata Oliv., and Metriona bivittata Say.

FLEA-BEETLES (Halticinae)

outh
arolina

J. A. Berly (June 16): We have had one report from Easley of flea-beetles causing considerable damage to sweet potato plants that had not been set long. Did not have opportunity to determine the species.

A BLISTER BEETLE (Epicauta lemniscata Fab.)

ississippi

R. W. Harned (June 20): Blister beetles have been reported as damaging sweet potatoes and tomatoes in LeFlore and Sunflower Counties.

SPHINX LARVAE (Herse cingulata Fab. et al)

- Alabama J. M. Robinson (June 11): Yesterday we received some specimens of sphinx larvae of, at least, three different species, reported as having already destroyed three acres of sweet potatoes.
- Georgia E. M. Gaddis (May 25): Damage to sweet potatoes at Tifton by sphinx larvae is minor.

Syntomeida impomeae Harr.)

- Georgia B. M. Gaddis (August 7): Attacking moon vine at Ridgeville.

PEPPER

PEPPER WEEVIL (Anthonomus eugenii Cano)

- Mississippi M. M. High (June 5): The pepper weevil has shown up again in spots, but apparently in small numbers, although Alsmeyer (county agent), San Benito, reports one heavy infestation in the county, and I have arranged with him to conduct some experiments.

COTTONBOLL WEEVIL (Anthonomus grandis Boh.)

- South Carolina J. A. Berly (June 16): Received within the past few weeks a few weevils from Orangeburg, Greenwood, and Clemson College, collected on young cotton plants in fields.
- Georgia J. W. Bunn (May 28): At Fairfax they are just starting to appear. Although no other material has been sent in since the above date, reports are that the boll weevil is becoming increasingly prevalent.
- Mississippi T. F. McGehee (June 17): First weevil found in this section on May 24 this year as compared with May 28 last year. Weevils do not appear to be as numerous this year as last year this same date.
- R. W. Harned (June 20): The boll weevil is reported from most sections of the State, but almost everywhere it seems to occur in much less numbers than a year ago at this time.
- Geo. E. Riley (June 13): 1,950 stalks of cotton about knee high with from 5-10 squares were examined in vicinity of Yazoo and Mississippi Rivers and not a single weevil was found.
- Oklahoma E. E. Scholl (June 23): Reported from the following counties: Sequoyah, LeFlore, Muskogee, McIntosh, Johnston, Atoka, and Murray.
- Texas F. L. Thomas (June 7): Three per cent infestation reported from Brownsville.

GARDEN WEBWORM (Loxostege similalis Guen.)

- Oklahoma E. E. Scholl (June 23): The garden webworm is at work in cotton fields in the extreme southeastern part of the State.
- Texas F. L. Thomas (June 20): Has been causing some concern to cotton growers. It has been abundant in four counties. Began the last of May in Hidalgo County.

WINGLESS MAY BEETLES (Phyllophaga cribrata Lec.)

- Oklahoma E. E. Scholl (June 23): Wingless May beetles are very destructive to cotton plants in the Counties of Cotton, Tillman, and Jackson. The bran mash used for grasshopper control work is being successfully used for this insect.

COTTON APHID (Aphis gossypii Glov.)

- Georgia J. W. Bunn (May 28): Heavily parasitized; many ladybird larvae present at Fairfax.

Oliver I. Snapp (June 14): Very abundant in some fields this season at Fort Valley.

COWPEA CURCULIO (Chalcodermus aeneus Boh.)

Georgia T. F. Carter (May 8): Reported from Experiment and Social, at ing cotton.

Oliver I. Snapp (June 7): A planter at Culverton reports that about 10 acres of cotton has been seriously injured by this insect at this place.

GRANULATED CUTWORM (Feltia annexa Treit.)

Georgia F. S. Chamberlin (June 10): A very heavy infestation of Feltia annexa was observed in one instance at Tifton on June 10. The infestation had started in a field of burr clover but as this supply of food became exhausted, the larvae moved into a field of cotton on one side and into a field of beans on the other. Much damage was done in each instance.

COTTON-BOLL CUTWORM (Prodenia ornithogalli Guen.)

Alabama J. M. Robinson (June 25): The cotton-boll cutworm has been reported as doing considerable damage to cotton foliage in the northern portion of the State.

Mississippi R. W. Harned (June 20): The yellow striped armyworm or cotton-boll cutworm has attracted attention throughout the State during the past month. Specimens were received from LeFlore, Jackson, George, and Noxubee Counties.

STALK BORER (Papaipema nitela Guen.)

South Carolina J. A. Berly (June 21): Appeared in a field about June 16, and has caused injury to quite a few plants at McCormick.

Mississippi T. F. McGehee (June 17): Stalk borers are doing more damage than usual to young cotton in this section, Holly Springs.

R. W. Harned (June 20): The moth stalk borer has attracted some attention in the northern part of this State as a pest of cotton during June.

COTTON SQUARE-BORER (Strymon melinus Hbn.)

Oklahoma E. E. Scholl (June 23): The cotton square-borer is at work on cotton fields in the extreme southeastern part of the State.

A CURCULIONID

Alabama J. M. Robinson (June 25): May 29 we received several specimens of a beetle from Cedar Bluff, which has been determined by H. P. Loding of Mobile as being Lepidocricus herricki Pierce. This insect was reported from Mississippi in 1904 as attacking cotton foliage and doing considerable damage.

WIREWORMS (Elateridae)

Louisiana

T. E. Holloway (June 17): In response to a request of a sugar planter, W. E. Anderson, State entomologist, and I visited a plantation near Morgan City, and found wireworms injuring young sugar cane in low, newly cleared land. The "eyes" were damaged on the planted seed cane, and borings were made at the base of the young plants somewhat similar to the work of *Diatraea*. Three hundred acres were said to be affected. Several control experiments were started.

FOREST AND SHADE-TREE INSECTS

MISCELLANEOUS FEEDERS

PERIODICAL CICADA (*Tibicina septendecim* L.) Brood XXIII.

Virginia

William Middleton (June 4): I picked up the accompanying pupa case of what appears to be the periodical cicada at Falls Church, Va., on June 4. This may be fairly interesting because no emergence is due there this year. I guess that it is a belated individual of the 14th brood and if there are sufficient of them they may form a regular appearing colony of the 15th brood.

Indiana

J. J. Davis (June 21): Began to show up in Vanderburg and Gibson Counties on June 11, and Montgomery reported it from Posey County on June 12. County agent Wilson of Evansville made a trip from Evansville to Terre Haute on June 14 and observed cicadas plentiful as far north as Sullivan.

B. A. Porter (June 3): Large numbers are emerging at Vincennes. Basil E. Montgomery also observed numbers of pupa shells on June 1. (23): Definite reports have come in of the occurrence of one or more swarms in each of the following Counties: Vanderburg, Posey, Gibson, Pike, Knox, and Daviess. The first to emerge near Vincennes were of the smaller variety, but both varieties were present later. Two distinct swarms have been noticed in the eastern part of the County, near the Wabash River, in Lawrence County.

Kentucky

H. C. Burnett (June 18): I noticed in the Globe Democrat a week ago or so about Brood XXIII of the so-called locusts. They have appeared here and are quite abundant. There are more now than there have been since I was a boy, 35 years or more ago at Kirksey, and I am now 52 years old.

Tennessee

Geo. A. Lyles (May 31): Locusts are in this part of the country, in the locality of Mason, and many people think they poison berries and other fruit so they are unfit for food.

C. E. Betts (June 5): We are seeing an increasing number of locusts from day to day. Their song through the day is one continual hum.

G. M. Bentley (June 17): Periodical cicada, 13-year variety, Brood XXIII, due to appear in all of the west Tennessee counties and some two-thirds of the counties in middle Tennessee, is making its appearance at this time.

Illinois

W. P. Flint (June 9): In my last notes for the Insect Pest Survey mention was made of the fact that the nymphs of this brood were then close to the surface. The first adults were noticed by Mr. Chandler at Carbondale on May 31, and were abroad in considerable numbers by June 7. While the records would indicate that there would be some adults in woodlands as far north as Urbana, we have failed to see any thus far.

Mississippi

R. W. Harned (June 20): Brood XXIII of the periodical cicada has now practically disappeared. A few specimens, however, are still being received daily. So far specimens of this insect have been received from Alcorn, Benton, Bolivar, Calhoun, Copiah, Carroll, DeSoto, Granada, Holmes, Humphreys, LaFayette, Tippah, Union, Yalobusha, Washington, Wilkinson, and Yazoo Counties.

Geo. H. Kent (May 16): Stragglers of a seemingly new brood of Cicada tredecim have reappeared during this month in Franklin County, in small numbers. This brood was first observed in the year of 1872, likewise in 1885, 1898, 1911, and now in 1924.

Edgar Roberts (June 4): In the past 10 days the locust has shown up in numbers and as this is the heart of the fruit belt, and there have been several thousand trees set out here this spring, it is greatly feared that they will do considerable damage.

Missouri

L. Haseman (June 20): The periodical cicada has appeared a little later than usual. Heavy rains have probably held them back some. Are reported abundant in some Ozark counties in central Missouri. In Boone County they have not yet attracted attention (June 20): Brood seems lighter than usual.

Arkansas

W. J. Baerg (June 2): I have a report from Marianna, Lee County, that the periodical cicada has been showing up here in fairly good numbers during the last few days. The report is dated May 30, and specimen accompanying letter is Tibicen septendecim-tredecim.

Louisiana

Jose Morgadanes (May 23): Reported from New Orleans.

W. E. Hinds (June 10): Some of these cicadas were active in the northwest corner of the State about May 20. I noticed them in West Carroll Parish.

FOREST TENT CATERPILLAR (Malacosoma disstria Hbn.)

- Maine E. M. Patch (June 21): Infesting the northern part of our Maine forests. This report was received from Mr. Donald McLellan. Larvae nearly full fed.
- New York Fred N. Schott (June 14): Along with americana, this species appears to be unusually abundant this season at Long Island.
- New Jersey Fred N. Schott (June 14): Along with americana, this species appears to be unusually abundant this season in the northern half of this State.

SNOW-WHITE LINDEN MOTH (Ennomos subsignarius Hbn.)

- Indiana J. J. Davis (June 21): The snow-white linden moth is common on timber trees and other similar planted trees near timbered areas through the central part of the State, last of May and first of June. About the same area as 1923, but not as abundant or destructive judging from reports.

AN UMBER MOTH (Erannis tiliaria Harr.)

- New York C. R. Crosby (June 7): In Westchester County these worms are present in large numbers and are doing serious damage in perforating the foliage of several kinds of trees.

BOXELDER

BOXELDER APHID (Periphyllus negundinis Thos.)

- Nebraska M. H. Swenk (May 15-June 15): The cool backward nature of the spring has brought forth a very great abundance of aphids of many kinds. The boxelder aphid continued to be reported as very abundant on boxelder trees in central and southwestern Nebraska during the latter half of May.

CATALPA

CATALPA SPHINX (Ceratonia catalpae Pdv.)

- Mississippi R. W. Harned (June 20): The catalpa sphinx has been reported as defoliating catalpa trees in the western half of the State.

ELM

ELM COCKSCOMB GALL (Colopha ulmicola Fitch)

- Indiana J. J. Davis (June 21): Received from several correspondents who report it abundant on young elms.

EUROPEAN ELM SCALE (Gossyparia spuria Modear)

June 16): Severe infestation of the European elm scale in parts of Wichita, especially on young elm trees.

Utah

Geo. F. Knowlton (May 27): European elm trees are, as a rule, attacked severely by the European elm scale and many young trees set out for shade are being killed by this insect. Some are spraying with kerosene emulsion.

A FLEA-BEETLE (Ealtica ulmi Woods)

Connecticut

W. E. Britton (June 24): A large number of these green beetles were found at the base of a tree about June 1. We occasionally ran across this insect. Larvae caused about the same kind of injury as elm beetle.

LARCH

LARCH CASE-BEARER (Coleophora laricina Hbn.)

Connecticut

W. E. Britton (June 14): Reported as being very bad on native larch at Canaan (in swamps) and at Greenwich.

MAPLE

COTTONY MAPLE SCALE (Pulvinaria vitis L.)

Indiana

J. J. Davis (June 21): Again becoming conspicuous because of the cottony masses resulting from egg-laying. Apparently occurs generally over the northern half of the State as heretofore and probably as abundant. Has not yet begun to hatch.

Mississippi

R. W. Harned (June 20): The cottony maple scale seems to be more abundant in this State this year than for a number of years. The leaves and twigs of maple trees and other host plants are in many cases densely covered with these insects.

MAPLE MOTH (Synanthedon tepperi Edw.)

Mississippi

K. L. Cockerham (June 13): Mr. McLemore and I collected in Gulfport this spring a rare species of maple moth, which, according to Mr. F. E. Benjamin of Illinois, has been collected in only two other localities in the United States. This insect was inflicting the most severe injury to maple that I have ever seen on these trees.

SILVER-MAPLE LEAF-MITE (Phyllocoptes quadripes Shim.)

Ohio

H. A. Gossard (June 5): Received from Cleveland on maple on June 5, and from Cincinnati on June 8.

Nebraska

M. H. Swenk (June 15): Possibly in response to the same influence of the late spring, the maple bladder galls, produced by Phyllocoptes quadripes on maple, were more than usually in evidence.

OAK

* LEAF-ROLLER (prob. Tortrix quercifoliaria Fitch)

Connecticut

W.E. Britton (June 9): Medium sized trees partially and wholly stripped at Stamford. More abundant as compared with an average year.

PINE

PARALECHIA PINIFOLIELLA CHAMB.

Maine

E. M. Patch (June 23): Everywhere on the Island on Pinus rigida. Also on Pinus banksiana. This is the first time either Prof. Briscoe, Forester, or I, have seen this insect in Maine.

SOUTHERN PINE BEETLE (Dendroctonus frontalis Zimm.)

Georgia

L. W. Brown (June 3): Reported from Americus, attacking Himalayan pine.

WHITE-PINE WEEVIL (Pissodes strobi Peck)

New York

C. R. Crosby and assistants: Has been laying eggs for nearly two weeks and has done much damage in reforestation plantings in Chautauqua County.

PINE SCALE (Toumeyella pini King)

Nebraska

M. H. Svenk (May 15-June 15): An infestation of a large jack pine plantation in Holt County with the pine scale was found during the latter part of May. These scales are rapidly killing the trees.

SPRUCE

CHERMES SP.

Connecticut

W.E. Britton (June 13): Egg masses now abundant on leaves in New Haven. Very abundant as compared with an average year.

DILACHNUS PINICOLA KALT.

Ohio

H. A. Gossard (June 17): Received from Elmore on June 3, attacking Norway spruce.

PHYSOKERMES ABIETIS L.

Michigan

R. H. Pettit (June 19): Is so plentiful on our Norway spruces that the bees hovering over these trees in search of honeydew literally make the tree hum.

TULIP

TULIP SCALE (Toumeyella liriodendri Gmel.)

Mississippi (June 23): Several tulip trees on the college campus with young growth heavily coated with partly developed scale insects of the tulip-tree soft scale.

MEALYBUGS (Pseudococcus sp.)

Connecticut W. E. Britton (June 13): In the vicinity of Cobalt this insect seems to be attacking trees growing out of doors. Sent specimens to Mr. Harold Morrison.

INSECTS ATTACKING GREENHOUSE
AND ORNAMENTAL PLANTS

MISCELLANEOUS FEEDERS

A ROACH (Pycnoscelus surinamensis L.)

Massachusetts A. I. Bourne (June 24): A note of possible interest may be made of the finding of the roach Pycnoscelus surinamensis. It was found to be occurring in large numbers in greenhouses at Revere in the eastern part of the State. These roaches were very abundant in the soil of a rose house, and seemed to be doing considerable injury.

VARIEGATED CUTWORM (Lycophotia margaritosa Haw.)

Ohio H. A. Gossard (June 20): The variegated cutworm was received from Smithville on June 16, where it was reported to be very numerous in a greenhouse and was feeding on lettuce.

GARDEN FLEA-HOPPER (Halticus citri Ashm.)

Ohio H. A. Gossard (June 20): The garden flea-hopper was received from Berea, May 22, and reported to be severely attacking greenhouse cucumbers.

PLANT-LICE (Aphididae)

Missouri L. Haseman (June 20): Spiraea, Deutzias, and roses quite seriously infested. Also some trouble developing on garden crops and on fruit trees.

A FLEA-BEETLE (Haltica litigata Fall)

Mississippi R. W. Harned (June 20): Leaf-beetles, probably Haltica litigata, have been reported as damaging cotton and crepe myrtle in Bolivar County, the latter part of May and the first of June. Various weeds and wild plants were also badly infested.

BARBERRY APHID (Liosomaphis berberidis Kalt.)

Utah

Geo. F. Knowlton (June 10): Very numerous on Berberis vulgaris on the campus of the Utah Agricultural College, often covering a good part of both upper and lower surfaces of the leaves.

CARNATION

RED SPIDERS (Tetranychus telarius L.)

Massachusetts

A. I. Bourne (June 24): I have received a report from Prof. Koon relative to finding red spiders in carnation houses in eastern Massachusetts. An estimate of the loss which they have already caused in that locality is placed at approximately 10 per cent.

CHRYSANTHEMUM

BLACK CHRYSANTHEMUM APHID (Microsiphoniella sanbornii Gill.)

Nebraska

M. H. Swenk (May 15-June 15): Ornamentals of various sorts have shown a widespread and heavy infestation, especially by this insect on chrysanthemums.

DELPHINIUM

Nebraska

M. H. Swenk (May 15-June 15): A new aphid for this State, determined tentatively as Aphis rociadae Ckll., was found on cultivated larkspur in Nemaha County during the last week of May.

EUONYMUS

MEALY FLATA (Ormenis pruinosa Say)

Mississippi

R. W. Harned (June 20): This fulgorid is now abundant at many places in the State on many different kinds of plants. It has been reported especially on euonymus from Gulfport and on privet from Hattiesburg.

HOLLYHOCKS

PAINTED LADY (Vanessa cardui L.)

Delaware

C. O. Houghton (June): Good sized larvae were found about the middle of June. These soon formed chrysalids and the adults emerged June 21-22. Chrysalids of this species are decidedly animated when disturbed and swing rapidly, like a pendulum, for some time.

RHOPODENDRON

AZALEA BARK SCALE (Eriococcus azaleae Comst.)

Connecticut W. E. Britton (June 24): Reported from Orange attacking rhododendron.

ROSE

A ROACH (Pycnoscelus surinamensis L.)

Connecticut W. E. Britton (June 13): Reported as eating the tender bark from the young plants at Rowayton, in greenhouse roses.

FULLER'S ROSE BEETLE (Pantomorus fulleri Horn)

Georgia L. F. Shaw (July 3): Reported as doing considerable damage at Cartersville.

ROSE SAWFLY (Caliroa aethiops Fab.)

Missouri L. Haseman (June 20): Have just completed their usual work of foliage destruction where roses are not treated.

Kansas J. W. McColloch (June 15): The rose slug has been abundant at Wilson, Allen, Jewell, and Manhattan, where severe defoliation has taken place.

ROSE SCALE (Aulacaspis rosae Bouche¹)

Georgia V. C. Durham (May 20): Reported from Brunswick attacking rose.

ROSE APHID (Macrosiphum rosae L.)

Ohio H. A. Gossard (June 3): Received from Lakeside on rose on this date.

Nebraska M. H. Swenk (May 15-June 15): Ornamentals of various sorts have shown a widespread and heavy infestation, especially by this insect on rose.

SPIRAEA

SPIRAEA APHID (Abais spireaella Schout.)

Indiana J. J. Davis (June 21): Again very abundant on Spiraea vanhouttei at LaFayette.

Nebraska M. H. Swenk (May 15-June 15): Ornamentals of various sorts have shown a widespread and heavy infestation, especially by this insect on bridal wreath.

SNOWBALL

SNOWBALL APHID (Anuraphis viburnicola Gill.)

Nebraska M. H. Swenk (May 15-June 15): Ornamentals of various sorts have shown a widespread and heavy infestation, especially by this insect on snowball.

I N S E C T S E F F E C T I N G M A N

A N D D O M E S T I C A N I M A L S

MAN

FLEAS (Siphonaptera)

South Carolina J. A. Berly (June 16): We have had several requests within the past week in regard to the control of fleas. These reports come from different sections of the State.

Missouri L. Haseman (June 20): Some complaints of fleas in barns, on lawns and in homes. Calcium cyanide is being used successfully for control of the pest.

CHIGGERS (Trombicula tlalzahuatl Murray)

Missouri L. Haseman (June 20): This annoying pest is just beginning to make his presence felt.

Texas O. G. Babcock (June 21): Never were so very numerous. More numerous during the first part of June than for the past four years. Suddenly ceased to minimum following a week of hot, dry weather at Sonora.

CATTLE

SCREWWORM (Chrysomya macellaria Fab.)

Texas O. G. Babcock (May 31): This species is much later this year than normally. At the present time it is the most common species found in traps. Screwworm cases are few in numbers thus far. (June 21): At Sonora screwworm cases are less numerous to date than usual for this season of the year.

BLACK BLOW-FLY (Phormia regina Meig.)

New Mexico O. G. Babcock (April 26-28): This appeared to be the only species of blow-fly observed about carcasses upon the range. Calliphora coloradensis Hough found in the Carlsbad caverns but not upon the carcasses on the range.

STABLE FLY (Stomoxys calcitrans L.)

Missouri L. Haseman (June 20): Beginning to prove very serious on cattle.

HORN FLY (Haematobia irritans L.)

Missouri L. Haseman (June 20): Beginning to prove very serious on cattle.

Texas O. G. Babcock (June 21): During the forepart of June this pest has been quite numerous at Sonora, ranging from 200 to 700 flies in the worst cases.

POULTRY

POULTRY ROOST MITE (Dermanyssus gallinae Redi)

Texas O. G. Babcock (May 31): For some reason this mite is and has been very scarce all spring in this section. Almost impossible to find it in the poultry houses at Sonora.

A CHIRONOMID (Forcipomyia specularis Coq.)

Indiana J. J. Davis (June 21): A small chironomid fly was reported from Winamac on June 2 as quite annoying to poultry.

I N S E C T S I N N E S T I N G H O U S E S A N D P R E M I S E S

ANTS (Formicidae)

Connecticut W. E. Britton (June): Reported as being a nuisance in lawns, gardens, dwelling houses, etc., and even said to be girdling tomato plants. Very troublesome in the different parts of the State. More abundant as compared with an average year.

Indiana J. J. Davis (June 21): Receiving many reports of ants in lawns from all parts of the State.

TERMITES (Reticulitermes flavipes Kol. et al.)

South Carolina J. A. Berly (June 16): Three generations in Greenwood have been seriously injured by attacks of termites necessitating replacement of foundation timbers and flooring. Serious damage was done to the Methodist Church at Marion.

Indiana J. J. Davis (June 21): Continue to have frequent reports of damage by these insects throughout the southern two-thirds of the State.

- Alabama J. M. Robinson (June 25): Recently we had an inquiry from Birmingham on how to control termites. They were attacking one of the aristocratic homes of that city.
- Kansas J. W. McColloch (June 17): The following reports have come in during the past month. Much of the woodwork in a house at Argonia damaged; the oak woodwork in a dining room of a residence at Manhattan undermined. A number of cherry trees at Manhattan and Cherryvale have been killed.

ARGENTINE ANT (Iridomyrmex humilis Mayr)

- Mississippi M. R. Smith (June 17): Recent investigations of the results secured from the ant poisoning campaign conducted at Atta Bona during the fall of 1923 show a cost of 98.3 per cent. This means that 98.3 per cent of the housekeepers interviewed stated they had not seen or been troubled by any ants since poisoning. Only three small trails of the ants were noticed during the process of investigation.
- R. W. Harned (June 20): In most of the towns where Argentine ant control campaigns were put on last year the control has been almost remarkable. In most cases practically 100 per cent of the houses have been entirely free of any ants. The results from the campaigns put on last year were apparently better than those put on during any previous year.

FIRE ANT (Solenopsis geminata Fab.)

- Georgia V. C. Durham (May 25): Said to be causing considerable annoyance about Savannah.
- Mississippi M. R. Smith (June 13): Workers of this species were observed infesting food in several houses in the locality of Columbus.
(June 13): At A. & M. College males and females of this species were observed taking their nuptial flight on the afternoon of June 11.

CLOVER MITE (Bryobia praetiosa Koch)

- Ohio H. A. Gossard (June 20): Was received from Mt. Vernon on May 21, where it was overrunning brick walls and entering at the windows of a dwelling house.



THE INSECT PEST SURVEY BULLETIN

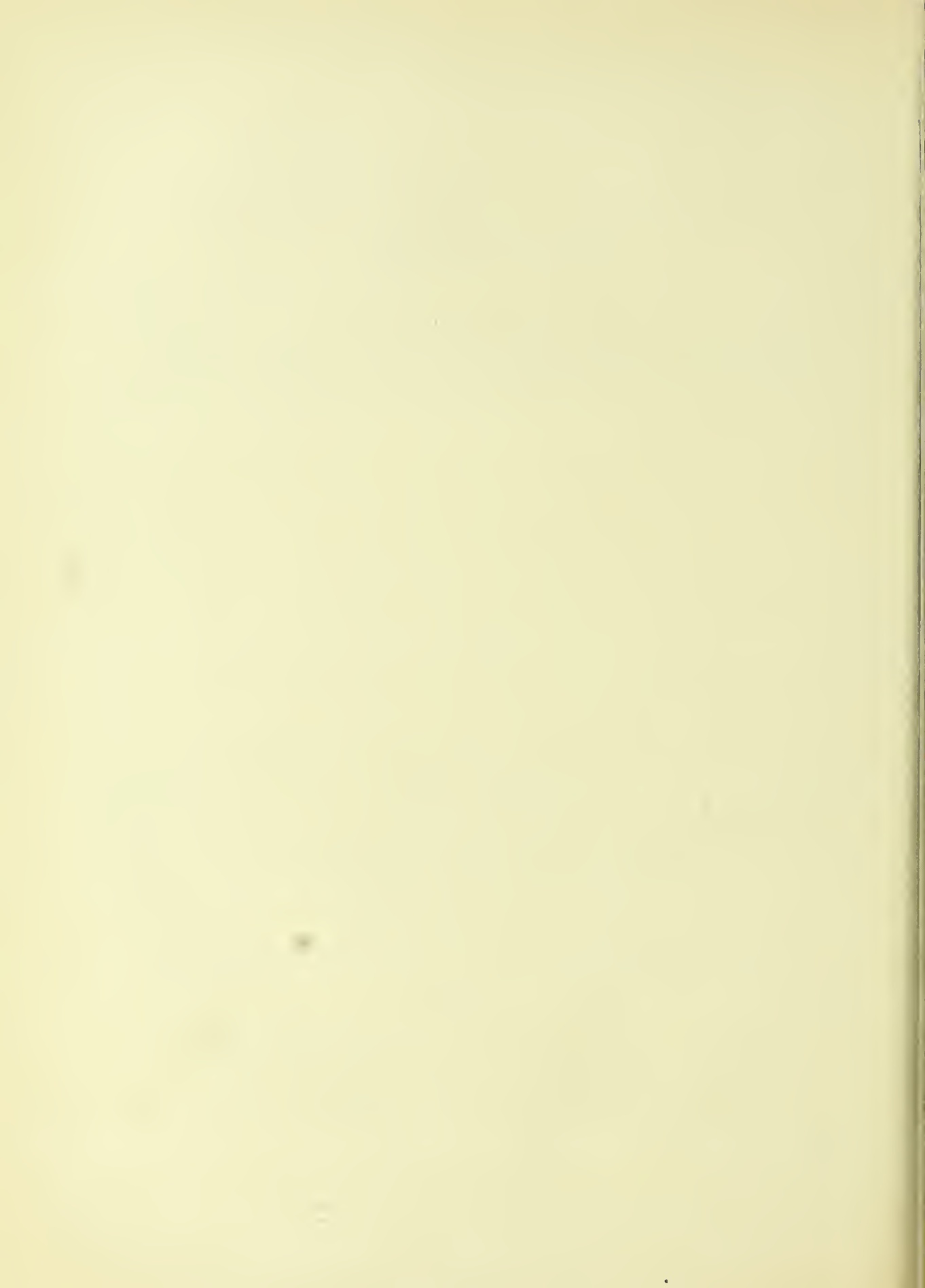
A periodical review of entomological conditions throughout the United States,
issued on the first of each month from April to November, inclusive.

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BUREAU OF ENTOMOLOGY
UNITED STATES
DEPARTMENT OF AGRICULTURE
AND
THE STATE ENTOMOLOGICAL
AGENCIES COOPERATING



OUTSTANDING ENTOMOLOGICAL FEATURES IN THE UNITED STATES FOR JULY, 1924

The armyworm outbreak reported in the last number of the Bulletin advanced northward during the month, developing most seriously in the northern third of Illinois and southern Wisconsin. In Ohio and Indiana the damage seems to be less severe.

Cutworms continued to be an outstanding feature of the entomological conditions over practically the entire country extending from Maine to New Mexico.

The grasshopper situation on the whole does not seem to be as serious as usual.

The Hessian fly in Missouri, Indiana, and Michigan is threatening. In Kansas, owing to the very dry weather, the killing out of plants by the Hessian fly is believed to have been advantageous to the crop.

The chinch bug is generally less troublesome than usual in the eastern parts of its range, but very serious in Nebraska and Kansas.

The stalk borer is reported as generally numerous in New England and in the Ohio River States, and reports of damage also have come from Kansas and Nebraska.

Report has been received that this promises to be the worst codling moth year ever recorded in Washington State.

The Oriental fruit moth has been found in numerous places in the southeastern States.

The cherry fruit-fly continues troublesome in parts of Oregon and a State quarantine on the shipping of this fruit from these sections into the State of California has been promulgated.

The very unusual flights of the painted lady butterfly reported in the last number of the Bulletin seem to have been but a reflection of a very widespread increase in the numbers of this insect; during the month reports of unusual numbers of these butterflies and their larvae were received from Ohio, Michigan, Indiana, Illinois, Minnesota, and Oregon, and also from the Gila Bend section of Arizona and from the State of Sinaloa in Mexico.

The Mexican bean beetle during the month was discovered in Indiana and has materially advanced its range in Ohio and Georgia, as well as making substantial ground over the rest of the infested territory. In Wyoming the pest has extended its range 30 miles north of last year's infestation.

The cotton boll weevil situation is no more serious than last month, judging from the reports so far received.

An unusual pest in the form of an *Eleodes* beetle is recorded attacking corn in Tulare County, Calif.

A serious situation has developed in the Nebraska National Forest, where tip moth is materially interfering with the reforestation projects under way in that State.

In this number of the Bulletin is a review of reports on termite damage to woodwork throughout the United States during the past year.

The European earwig is increasing its activities in the Newport Colony in Rhode Island.

OUTSTANDING ENTOMOLOGICAL FEATURES IN CANADA FOR JULY, 1924

Aphids have been conspicuously abundant in many parts of Canada this season. In the Niagara district, Ontario, the black cherry aphid has been present in outbreak form, and there have been severe infestations of the rosy apple aphid and the green apple aphid. In New Brunswick the green apple aphid infestation has been very severe, especially in the St. John River Valley, and in the Prairie Provinces aphids of several species have been very abundant on many kinds of plants.

Severe local outbreaks of the forest tent caterpillar have occurred in Nova Scotia, New Brunswick, and western Ontario. In Saskatchewan the tent caterpillar situation has proved more serious and widespread than was at first anticipated and many species of deciduous trees, including aspen, poplar, willow, ash, wild rose, and choke cherry have been badly attacked.

The grape-blossom midge, *Contarinia johnsoni* Sling., is present in small numbers in vineyards from Niagara-on-the-Lake to Fruitland, Ont., and probably occurs in all parts of the grape belt, but so far has not caused serious injury.

The pear-leaf blister-mite is becoming widespread upon apples throughout the interior and Kootenay sections of British Columbia.

The currant fruit-fly, *EPOCHRA canadensis* Loew., is unusually abundant in southern Alberta, having been reported from Cardston, Magrath, Lethbridge, Medicine Hat, and Taber, and Foam Lake, Sask.

The cranberry rootworm beetle, *Rhabdonotus picipes* (Oliv.), has caused considerable injury to the apple crop in the Rougemont district, P. Q., damaging both leaves and fruit. This is apparently the first record of injury by this species in Canada.

In the Bulkley Valley and Lakes district of central British Columbia severe injury has been done to timothy hay which constitutes the principal crop of the district. The species involved are *Melanoplus borealis monticola* Fieber, and *M. brun* Scudder, the former doing by far the greater amount of damage, which is interesting as it has only been taken previously in very small numbers in patches of fireweed at high altitudes, in the southern part of the Province.

Wireworms are causing noticeable injury in the Prairie Provinces.

Extensive injury to corn, peas, potatoes, and small grains by the yellow-necked cutworm, Septis (Hadena) arctica Hdv., has been experienced in southwestern Ontario on the lighter types of soil.

In the infested area of southern Saskatchewan the northwest chinch bug, Blissus occiduus Barber, is appearing only in small numbers, even where it was enormously abundant last year. No damage has occurred and none is expected during the 1924 season.

The cottonwood leaf-beetle, Lina scripta Fab., is again abundant over the greater part of southern Alberta.

The rose-chaffer was present in immense numbers in some of the sandy sections of southwestern Ontario.

The rhododendron lace-bug, Stephanitis rhododendri Horv., has been found in the Victoria district, B. C., where it is probably well distributed. This is thought to be the first record of its occurrence in Canada.

The rose leaf-hopper has been a severe pest to rose bushes this summer all over the western part of Nova Scotia.

On the Quetico Forest Reserve, Ontario, an area of 130 square miles of red, white, and jack pine, burned over in 1923, is heavily infested by the black sawyer beetle, Monochamus scutellatus (Say), and to a much lesser extent by the pine sawyer, Monochamus notatus (Drury). A large section of virgin pines burned over in the Phipps Lake region, P. Q., in 1923 has also been heavily attacked by sawyer beetles with consequent serious depreciation.

CEREAL AND FORAGE-CROP INSECTS

MISCELLANEOUS FEEDERS

CUTWORMS (Noctuidae)

aine E. M. Patch (June 27): Larvae of Agrotis ypsilon Rott. are migrating from a grain field to an adjoining potato field at Mapleton. Report states: "Every plant that has barely pierced the ground is surrounded by 3 to 10 worms. They ate leaves and they are now cutting sprouts just beneath the surface." (July 3): County agent writes "100 acres of oats are being destroyed by cutworms. . . We have used poisoned clover in potato fields where the cutworms are working, with very good results." Crows were working night and morning in grain fields, filling up on cutworms, in Mapleton near Presque Isle in the locality I visited.

New Hampshire P. R. Lowry (June 30): Cutworms have been very common and injurious over the southern half of the State. Species undetermined. Bibio albipennis Say emerged in unusual numbers during the first two weeks of June, thousands covering the vegetation in gardens. We had many requests for control measures for this fly, as they were blamed for the cutworm injury.

- New York L. C. Tyler (June 21): Cutworms are ruining some cabbage plants in Nassau County, making it necessary to replant entire fields.
- C. R. Crosby (July 2): A field of corn at Durham is badly infested by Hadena fractilinea Grote. They enter the top of the young plants and eat out the heart, leaving the bottom of the plant with 3 or 4 leaves standing.
- Wisconsin S. B. Fracker (July 15): Serious loss of corn in one field in southern Grant County by attack of Lycophotia margaritosa Haw. Cutworms are reported from the following counties: Barron, Bayfield, Crawford, Dodge, Douglas, Dunn, Eau Claire, Fond du Lac, Grant, Green Lake, Juneau, Manitowoc, Marinette, Monroe, Oconto, Ozaukee, Pepin, Pierce, Portage, Price, Sawyer, Washington, and Winnebago.
- Wyoming C. L. Corkins (July 10): An outbreak, presumably of Chorizagrotis auxiliaris Grote, was reported by county agent of Lander. Have not yet seen specimens but from description of cutworm and the damage it is undoubtedly the army cutworm. This has also done some damage to gardens over the southern portion of the State.
- Colorado E. A. Back (July 11): On June 21 specimens were sent in from Uncle's cliffe of a moth which has been identified recently as Chorizagrotis auxiliaris, with the statement that these moths were very troublesome and made life miserable in many houses in that city.
- New Mexico E. A. Back (July 10): On June 16 specimens of the moth Chorizagrotis auxiliaris were sent in from Albuquerque with the statement that it is exceedingly annoying to occupants of houses in that city.
- Mexico R. H. Van Zwaluwenburg (June 25): The annual outbreak of Agrotis ypsilon occurs as usual on newly sprouted alfalfa in late November. Poisoned bran is used successfully. Where alfalfa is not poisoned it is eventually controlled by at least five species of tachinids and by Comptosia calipterus Say, but too late to save the crop. The annual outbreak of Laphygma exigua Huebner occurs at the same time.

GRASSHOPPERS (Acridiidae)

- Wisconsin S. B. Fracker (July 15): Camnula pellucida Scudd. et al. have been reported from the following Counties on grain, etc.: Door, Marinette, Florence, Pierce, and Price.
- Minnesota A. G. Ruggles (July 9): Several complaints have come in concerning grasshoppers. Camnula pellucida seems to be the one doing the damage. The spring has been so late that some of the eggs seem to be just hatching.
- Nebraska M. H. Swenk (June 15-July 10): Melanoplus bivittatus Say, etc., began hatching in the North Platte Valley during the last week in June, an unusually late date, the hatching no doubt having been delayed by the cold, backward spring. However, grasshoppers are present in subnormal numbers in this State this year.

ansas

Roger C. Smith (July): We had a small outbreak of the lesser migratory grasshopper (Melanoplus atlanis Riley) on alfalfa at the college farm last year but this year they are more plentiful. Control measures are being applied. They are present in their usual numbers in western Kansas.

exas

F. C. Bishopp (June): Grasshoppers were reported to be damaging cotton in a number of north Texas counties. At first the injury occurred only in bottom lands but later uplands were also invaded. At Uvalde some cotton fields were seen to be injured considerably by them, principally the lubber grasshopper (Brachystola magna Gir.) and the differential grasshopper (Melanoplus differentialis Thos.). A large amount of poisoned bait was distributed.

oming

G. L. Corkins (July 10): Melanoplus bivittatus and Camnula pellucida are late and less abundant than last year, but are doing damage in most of the irrigated valleys in the eastern section of the State. No large campaigns are yet necessary but many local infestations are being taken care of. An attack by Anabrus simplex Hald. should have been reported three months ago. One campaign was carried on with good results. New and additional territory is now being infested by migrating bands. The amount of damage is yet problematical.

ashington

E. J. Newcomer (June 20) (Extract from Yakima Republic, June 17, 1924): Farmers in Colville County are in bad straits this year, according to L. M. Holt, supervising engineer for the Indian reclamation service, who returned yesterday from a trip of inspection of the irrigation project there. Those who have crops under the irrigation project are having them destroyed by a plague of grasshoppers and those on the dry farm lands have no crops at all. This is the driest summer in 15 years according to the weather records of that section. Grasshoppers strip the fields clean as they go, leaving nothing but the stems of the wheat standing. In the dry land areas the grain is only a few inches high and the heads are shriveled.

WIREWORMS (Elateridae)

ew York

C. R. Crosby (June 18): Agriotes mancus Say are destroying a 4-acre field of oats in Otsego County. (June 19): Wireworms are reported as causing serious injury to corn and oats in several parts of Chemung County.

ashington

Monthly Letter of Bureau of Entomology, No. 122 (June): Reports from the Yakima Valley show that the wireworm appeared in unusually large numbers during the present spring and has caused heavy injury to miscellaneous crops. This insect, known as Pheletes occidentalis Cand., is closely related to the cultivated-land wireworm, (Limoni) Pheletes californicus Mann., which has been a consistent and serious pest of lima beans and sugar beets in the southern half of California.

WHEAT

HESSIAN FLY (Phytophaga destructor Say)

- Indiana J. J. Davis (July 22): Further observations on the Hessian fly corroborate our statement in the last Bulletin to the effect that we may anticipate injury in early sown fields of wheat this fall.
- Missouri L. Haseman (July 20): Stubble counts show following infestation: Springfield, 2 per cent; Columbia, 1/2 per cent; Charleston, 17 per cent; Maryville, 18 per cent; Cuba, 2 per cent; St. Louis, 13 per cent. An epidemic threatens. Control campaigns are being pushed.
- Nebraska M. H. Swenk (June 15-July 10): The wheat harvest, now in full swing in southeastern Nebraska, indicates that on the whole a good yield will be realized, notwithstanding the fact that the attack of the Hessian fly last fall destroyed completely a considerable acreage of wheat and materially thinned the stand of a larger acreage, while during the past May and early June the fly, in connection with unfavorable weather conditions, caused short and often only partly filled wheat heads to be the rule. It is generally realized that the present wheat crop would have been much better if the fly had not made this serious double attack upon the plants. Continued efforts will be made to increase the percentage of farmers that will await the fly-free date this fall and thus decrease fly injury on the next crop of winter wheat.
- Kansas J. W. McColloch (July 19): The severe Hessian fly infestation, which I reported from western Kansas during the winter, took a very big turn, and the farmers in that section consider the Hessian fly a blessing rather than a pest. Conditions for seeding last fall were exceptionally good and a very heavy stand of wheat was secured. The Hessian fly also being abundant killed out a good part of the stand, and at the time looked as though it had ruined the prospect for the wheat crop. This spring, however, the plants tillered over and at the time the fly was emerging, dry weather set in and proved fatal to the eggs, and there was very little further infestation this spring. Dry weather continued until harvest time, and the farmers claim that if the fly had not reduced the stand last fall the amount of wheat on the ground would have been too great for the available moisture supply. As it was, with the reduced stand, there was sufficient moisture for the crop and western Kansas is rolling in wealth at the present time. It is going to be very difficult to go into this country and talk Hessian fly control measures at the present time. (July 22): The data on the average acre loss has been furnished by E. C. Palton as follows: A loss of 6 bushels per acre is estimated in southeastern Kansas in Crawford County with 5 bushels loss in adjoining counties of Neosho and Cherokee. A region of 4-5 bushels loss is also located in east-central and northeastern Kansas, extending from Republic and Morris Counties east to Franklin and Brown Counties with a third similar region recorded in the northwestern and north-central part of Kansas, extending from Decatur and Wichita east to Mitchell County.

SMUT BEETLE (Phalacrus politus Melsh.)

Nebraska M. H. Swenk (June 15-July 10): An abundance of the smut beetle on ripening wheat was reported from Furnas County during the last week in June.

WHEAT JOINTWORM (Harmolita tritici Fitch)

North Carolina F. Sherman (July 5): This is usually a minor pest with us. There have been several recent reports.

Missouri L. Haseman (July 20): Stubble infested as follows:

Springfield	-	2 per cent	Columbia	-	1.7 per cent
Charleston	-	0 per cent	Maryville	-	0 per cent
Cuba	-	17 per cent	St. Louis	-	11.5 per cent

It is worse in some fields than the Hessian fly.

WHEAT STRAWWORM (Harmolita grandis Riley)

Kansas J. W. McCulloch (July 19): The wheat strawworm, while it was very abundant in the fields of northwestern Kansas this year, apparently ~~did not~~ reduce the yield as much as was anticipated. This is probably due to the fact that the second brood was delayed somewhat in its emergence, and at the same time conditions were favorable for early maturity of the wheat crop. While practically every straw was infested, yet the infestation did not take place in time for the heads to become blighted. (July 20): The area of heaviest infestation was in the northwestern part of the State from Graham and Pinney Counties westward. Slight injury was general over the State. No actual figures are available yet as to the real loss. Many samples of wheat had every straw infested and the heads blighted or poorly filled.

CORN

CHINCH BUG (Blissus leucopterus Say)

Indiana J. J. Davis (July 22): No reports of injury or abundance of this insect have been received so far.

Illinois W. P. Flint (July 21): The heavy rains of May and June have so reduced the numbers of this insect that there will probably be no necessity of taking any active measures of combating this pest during the present summer. It is present in fields in central and southern Illinois in smaller numbers than has been the case since 1912.

Missouri L. Haseman (July 20): The pest, in spite of rains, has done some migrating in southwestern and north-central Missouri, though over the State as a whole the chinch bug situation is favorable. Some signs of fungus are present.

Nebraska

M. H. Swenk (June 15-July 10): The chinch bug has been by far the most important insect pest in the State during the last three weeks. The area seriously infested includes the 10 counties touching the southern border of the State, from Richardson to Furnas Counties, inclusive, and eastwardly extends north into Nemaha, Johnson, southern western Otoe, southeastern Lancaster, and northern Saline Counties while westwardly it is practically confined to the southern tier of counties, except that the Furnas County infestation extends well up into Gosper County. The bugs began leaving the wheat in the southern tier of counties during the last week in June, chiefly from June 25 to 28, though the migration did not start in some fields until the first week in July. During the last four or five days there have been many complaints of heavy losses of corn because of invading chinch bugs. The weather has been very dry in Nuckolls, Webster, Franklin, Harlan, and Furnas Counties, and these counties are suffering the heaviest injuries, especially the central county of the block, Franklin, where the bugs seem to be especially numerous. Eastwardly Pawnee County continues to show the heaviest infestation, as stated in my report of June 20.

Kansas

J. W. McColloch (July 19): The chinch bug has been especially bad this year and reports coming to this office at the present time indicate that some farmers have lost as much as 100 acres of corn and sorghums. It is interesting to note that the heaviest correspondence has been from three north-central counties. (July 20): This insect has been worse than at any time since 1913. In some areas whole fields of corn and sorghums have been destroyed.

CORN EARWORM (Heliothis obsoleta Fab.)

South Carolina

Bureau of Entomology Monthly Letter, No. 122 (June): W. A. Thomas of Chadbourn, N. C., investigated an outbreak of the corn earworm on tomatoes in South Carolina and reported that this insect has caused considerable injury to the tomato fruits.

Georgia

O. I. Snapp (June 2): The corn earworm has been unusually abundant in middle Georgia this year, doing much damage to young corn. Severe injury has been reported from at least six counties.

Florida

F. S. Chamberlin (July 11): Corn earworm larvae of all sizes are present at this time. The ears in cornfields of this region were about 85 per cent infested.

Texas

F. C. Bishopp, through J. L. Webb (June): During June the corn earworm was quite abundant in the vicinity of Dallas. Sweet corn in gardens was almost completely ruined and tomatoes were attacked to a considerable extent.

STALK BORER (Papaipema nitela Guen.)

Maine

E. M. Patch (July 22): A report from North Alfred states: "The entire planting is infested with them."

- New Hampshire P. R. Lowry (July 19): A number of reports have been received of injury to corn and tomatoes.
- Massachusetts A. I. Bourne (July 24): There are indications of a moderately severe infestation this season. Tomatoes thus far appear to be the crop worst attacked. One report, however, of very severe injury to iris and other similar plants was received about the 10th of this month.
- Ohio E. W. Mendenhall (July 6): Stalk borers are doing considerable damage in the northwestern locality of Champaign County and nearly ruined some cornfields.
- Michigan R. H. Pettit (July 22): The common stalk borer is steadily becoming worse year by year. It is naturally confused with the European corn borer and every mail brings in many samples of the stalk borer working in corn.
- Indiana J. J. Davis (July 22): The common stalk borer has been unusually abundant in the past few weeks. We received the first reports of injury June 19 from Evansville where they were attacking tomatoes and from that time on the noticeably infested area gradually worked northward to Fort Wayne, where reports of injury were first received July 14. This insect has been pretty generally abundant and destructive throughout the State and has been especially conspicuous the past two weeks. It has injured tomatoes, corn, carnation, potato, and flower garden plants.
- Illinois W. P. Flint (July 21): The common stalk borer has been very abundant this season, and has been sent in from cotton, corn, tomatoes, potatoes, ragweed, smartweed, soybeans, oats, and several other plants. It was found by C. C. Compton in northern Illinois feeding in ripe strawberries. Larvae are now about one-third grown.
- Nebraska M. H. Swenk (June 15-July 10): The stalk borer was reported as feeding on the blades of corn, especially sweet corn, as well as burrowing in the cornstalks in Jefferson and Webster Counties during the last week in June. This pest became quite numerous during late June and early July, working not only in the corn but in raspberry canes, rose stems, and various ornamental plants.
- Kansas J. W. McColloch (July 18): The following reports have been received since June 20: Hymer, working on corn; Skiddy, damaging tomatoes; Lyons, damaging tomatoes; and Effingham, working on a variety of plants, principally gardens and ornamentals.

ARMYWORM (Cirphis unipuncta Haw.)

- Ohio T. H. Parks (June 28): One county in western Ohio reported armyworms injuring corn to some extent. The outbreak is localized and not reported as general over the county. Poisoned bran mash was used successfully.

- Indiana J. J. Davis (July 22): Since our report last month we have received additional reports of injury by armyworms and these have continued up to July 12 and have extended to the extreme northern end of the State, the first report in the northern boundary counties being June 23. They seem to be fairly heavily parasitized.
- Wisconsin S. B. Fracker (July 15): Heavy attacks in bottom lands of southern Grant County, less loss in Spring Grove township, Green, and several southern townships of Rock County. In most cases poisoned bran was applied in time to prevent serious damage.
- Illinois W. P. Flint (July 21): Armyworms were very abundant and destructive in some 40 or more counties throughout the State, the worst outbreaks occurring in the northern third of the State. A warning was sent out regarding the probable occurring of armyworms, and severe damage was prevented in many cases through the action of the county agents. The loss in corn from this pest would amount to only a small fraction of the corn acreage in any county where the outbreaks occurred.

SILVER-STRIPED WEBWORM (Grombus praeffectellus Zinck.)

- Connecticut W. E. Britton (July 18): Eating into cornstalk at surface of ground at Shelton.

SOUTHERN CORN ROOTWORM (Diabrotica 12-punctata Fab.)

- Maryland J. A. Hyslop (July 22): For the first time in the past six years I have observed Southern corn rootworm seriously damaging sweet corn. In a small patch at Avenel about 20 per cent of the plants had the roots so badly eaten that the plants were upset and dead. Larvae were still present in the ground at this date.
- Indiana J. J. Davis (July 22): The southern corn rootworm has been doing considerable damage to sweet corn in the Purdue Experimental plots at Lafayette within the last two weeks.
- Illinois W. P. Flint (July 21): Adults of this species were extremely abundant during May. At the present time reports are coming in from all over the State of injury to corn by the larva. Larvae of the first brood are now pupating, so that it is possible that a considerable second brood may appear this season.

SUGAR-CANE BEETLE (Eutheola rugiceps Lec.)

- North Carolina F. Sherman (July 5): This southern species occasionally damages corn in our warmer sections. There has been at least one case of noticeable damage.
- Missouri L. Haseman (July 1-20): This is our first experience with this pest. Attacking corn at Dexter and Dudley.

CORN ROOT-APHID (Aphis maidi-radici Forbes)

Nebraska

M. H. Swenk (June 15-July 10): Information received during early July indicated that the prevalence of the corn root-aphid in Franklin and Harlan Counties, mentioned in my report of June 20, extends north into Phelps County also, and that the insect has been equally injurious in that county this spring.

ALFALFA AND CLOVER

ALFALFA WEEVIL (Phytonomus posticus Gyll.)

California

Weekly News Letter, State of California, Vol. 6, No. 15, July 26: "That insects are carried and transported in this manner (by automobile) is well demonstrated by the findings of the inspectors at the border stations. During the month of June of this year live insects, many of them alfalfa weevils, were taken from 61 automobiles. As many as 140 live alfalfa weevils were shaken from the camping equipment carried by one automobile, and only a few days ago 40 live alfalfa weevils were intercepted in a small quantity of green alfalfa hay which the camper had gathered in Nevada. Interceptions of from one to a dozen or more alfalfa weevils in a live condition are daily occurrences at the border stations, and any one of these lots of insects if not intercepted might be the means of introducing the pest into California, thus placing upon the alfalfa grower of this State the added tax of control measures to suppress it.

Utah

Geo. I. Reeves (July 8): We have done little scouting in new territory for the alfalfa weevil this year, owing to lack of funds and assistance and preoccupation with the more urgent economic work of perfecting the dusting method, importing parasites, and assisting the University of Nevada to adapt our control measures to Nevada conditions. The attack has been severe but well controlled in Utah and Colorado. The attack in Utah has shown an increase over last year corresponding very closely with the increased warmth and earliness of the season. The parasite Pathyplectes curculionis is generally present both in damaged and undamaged fields. (July 15): Alfalfa weevil injury is noticeable in fields east of River Heights and some other parts of Cache County.

FALSE CHINCH-BUG (Nyzius ericae Schill.)

Nebraska

M. H. Swenk (June 15-July 10): During the last half of June and up to July 10 the false chinch-bug has, like the true chinch bug, appeared in large numbers in a part of the State. The infested area extends from Thomas County west to Scottsbluff County and north to Dawes County. These bugs have appeared in the gardens, attacking radishes, lettuce, and other vegetables, and also are reported as swarming in great numbers around certain weeds.

Utah

Geo. F. Knowlton (July 11): The false chinch-bug is present in northern Utah and doing damage in a few fields. As a rule it is not found in damaging numbers.

GARDEN WEBWORM (Loxostege similalis Guen.)

- Kansas Roger C. Smith (July 1-15): We had a large State-wide outbreak last year and we have predicted local outbreaks this year. It is plentiful in some fields at Manhattan and Emporia.
- Texas F. C. Bishopp (June): During the first half of June the webworm appeared in destructive numbers in Dallas and other north Texas counties. In Dallas County it was estimated that 1 per cent of the cotton acreage was infested and most of this very seriously damaged. Considerable poisoning with calcium arsenate was resorted to.

PEA APHID (Illinoia pisi Kalt.)

- Kansas Roger C. Smith (Apr. 12-May 2): This insect has been present in damaging numbers in the Kaw Valley for the last three springs. It appeared on alfalfa in damaging numbers the spring of 1921 for the first time. At Manhattan on the south side of a building; in the Kaw Valley several fields were destroyed as well as in Lincoln County.

FAIR ARMYWORM (Laphygma frugiperda S. & A.)

- Louisiana T. E. Holloway and W. E. Haley (July 3): This pest had defoliated alfalfa, and had partly defoliated corn and sugar cane. Only a few acres were observed infested. Few larvae are now on the plants, and they have apparently left to pupate. These observations were made at Paceland. Near Houma the same day larvae were frequently observed on sugar cane, but were not doing much damage. It is likely that the pest will be controlled by parasites.

GREEN CLOVER WORM (Plathypena scabra Fab.)

- Mississippi R. W. Harned (June 20): An insect that is probably the green clover worm has been reported as seriously damaging alfalfa in Bolivar County.

ZEBRA CATERPILLAR (Ceramica picta Harr.)

- Indiana J. J. Davis (July 22): In a few fields of sweet clover, notably one field in Randolph County, the zebra caterpillars were abundant. They were hardly abundant enough to damage the crop, however.

VARIEGATED CUTWORM (Lycophotia margaritosa Haw.)

- Illinois W. P. Flint (July 21): This cutworm has been more than usually abundant in clover and alfalfa. It has doubtless reduced the yield of hay from both these crops, although no cases have been reported where fields have been destroyed.

AUTOGRAPHIA OU Guenée

CORRECTION:

R. W. Harned (July 7): What appeared as the green clover worm, Plathypena scabra Fab., on page 114 of Vol. 4, No. 4, of the Insect Pest Survey Bulletin, should be Autographa ou. These insects are especially serious on Melilotus.

SOYBEAN

BROWN COLASPIS (Colaspis brunnea Fab.)

Indiana

J. J. Davis (July 22): Adults were reported from Nashville on July 18 as conspicuously eating the foliage of soybeans. This insect is becoming increasingly abundant and destructive, the beetles eating the foliage of clover and soybeans and the grubs injuring corn plants following clover, especially if the clover is plowed in the fall of the year. Inasmuch as it seems to have a preference for clover roots, we would suggest the common name of clover white grub for this insect.

LESSER CORN STALK-BORER (Elasmopalpus lignosellus Zell.)

Louisiana

J. W. Ingram (July 21): During the latter part of June larvae of the lesser corn stalk-borer were found attacking soybean plants near Crowley. In some cases the injury to the young plants was so great as to necessitate replanting of the beans. Adult specimens were sent in, and were determined by Mr. Heinrich. At present the borers are still at work in the beans, but the soybeans are too large to be killed outright by tunneling, although they are easily broken off in cultivation.

SORGHUM AND KAFIR

CORN-LEAF APHID (Aphis maidis Fitch)

Kansas

J. W. McColloch (July 18): The following reports have been received recently: Neosho Rapids, seriously injuring cane and kafir; Burlington, have seriously injured 35 acres of kafir; and Ida, seriously injuring kafir.

KAFIR ANT (Solenopsis molesta Say)

Kansas

J. W. McColloch (July 20): At Eskridge farmers have had to replant sorghum two and three times. A farmer at Westphalia has been unable to get a stand of feterita. Damage has also been reported from Eureka.

FRUIT INSECTS

APPLE

GREEN APPLE APHID (Aphis pomi DeG.)

- Massachusetts A. I. Bourne (July 24): The green apple aphid was very abundant this year, attaining unusually large numbers rather rapidly. The natural enemies seemed to overtake the lice before they had been able to do any serious amount of damage.
- New York C. R. Crosby and assistants: A serious outbreak was reported on nursery stock at Honeoye Falls on July 5. This insect is also reported from Dutchess County as being very numerous on young trees and in Ulster County it was also becoming numerous.
- Wisconsin S. B. Fracker (July 15): Reported from the following counties: Douglas, Eau Claire, Florence, Marinette, Ozaukee, Portage (bad), Rock, Washington, Waukesha, and Winnebago, attacking apple.

ROSY APPLE APHID (Anuraphis roseus Baker)

- Massachusetts A. I. Bourne (July 24): The rosy apple aphid is very generally distributed throughout the State in orchards and is apparently more abundant than it has been for a considerable period of years. Migration began about the first week in July and was apparently very nearly complete by the end of the second week.
- New York C. R. Crosby and assistants: This insect has been reported as unusually abundant throughout practically the entire apple growing section of the State, both in western New York and in the Hudson Valley.
- Arkansas A. J. Ackerman (July 17): The rosy apple aphid has been found in practically every orchard of this fruit section, but injury by this species has been of little consequence this season as compared with last year.

CODLING MOTH (Carpocapsa pomonella L.)

- Massachusetts A. I. Bourne (July 24): The codling moth this year has not apparently been as serious a pest as usual. The very first of the second-generation moths are just emerging at this time.
- Indiana J. J. Davis (July 22): The codling moth is not nearly as abundant this year as in past seasons.
- B. A. Porter (July 25): The second brood of moths began emerging on July 6.
- Wisconsin S. B. Fracker (July 15): Reported from Brown, Dodge, Green, Lake, Monroe, and Walworth Counties, attacking apple.

- Illinois W. P. Flint (July 21): The second-brood codling moth was greatly delayed by the cold, wet weather of the spring. Adults did not emerge in the extreme southern part of Illinois until July 12, and have just started coming out in the Olney-Centralia fruit districts, Clay, Richland, and Marion Counties. The insect is less abundant than usual throughout the State.
- Arkansas A. J. Ackerman (July 17): Frequent rains during the latter part of May and in June washed the spray solutions from the apple at the time when the first-brood worms were hatching in large numbers. As a result, the codling moth is unusually abundant in many orchards. A larger number of "stings" are evident this year than is the usual case. Second-brood worms are now entering the fruit.
- Washington E. J. Newcomer (July 7): This promises to be one of the worst codling moth years ever experienced in Washington. Continued warm weather during May resulted in more eggs being deposited than usual, an average of over 30 per female being obtained while in cool seasons the average is as low as 6. A light crop, due to late frosts, makes the situation worse, and a very early season will allow the worms to work longer than usual, and will probably result in a larger third brood than normal. The first full-grown worms were found leaving the fruit on June 9, while the average date for this valley is June 21.

APPLE LEAF-SKELETONIZER (Canarsia hammondi Riley)

- Arkansas A. J. Ackerman (July 17): Injury caused by the first-brood larvae of the apple leaf-skeletonizer is quite common at this time, especially on trees not yet in bearing which often do not receive the late summer sprays. This insect caused much damage to young trees last season.

FRUIT-TREE LEAF-ROLLER (Cacoecia argyrospila Walk.)

- New York C. R. Crosby and assistants: Reported present in large numbers in many orchards in Ontario County, and very severe in Orleans County, damaging a large amount of fruit.
- Utah Geo. F. Knowlton (July 15): Fruit-tree leaf-rollers are numerous in the moth stage and have been depositing eggs for the last two weeks in Cache Valley. So far a great number of egg masses have been deposited in the infested orchards.

APPLE AND THORN SKELETONIZER (Hemerophila pariana Clerck)

- Massachusetts A. I. Bourne (July 24): The apple and thorn skeletonizer is gradually spreading to all parts of the State. The first cocoons of the first generation were noted about June 24 to 27, and early in July the moths of the second brood began to appear.
- Connecticut W. E. Britton (July 19): Much less abundant than last year at New Haven.

TENT CATERPILLAR (Malacosoma americana Fab.)

- New Hampshire P. R. Lowry (July 12): Adults are now emerging. Has been very common but hardly as numerous as last year in this locality (Durham).
- New York C. R. Crosby and assistants: Many trees especially on roadsides practically defoliated in Columbia County, while these insects have been doing much damage in neglected orchards in Genesee County.
- Wisconsin S. B. Fracker (July 15): Reported from Sauk County attacking apple.

WHITE-MARKED TUSSOCK MOTH (Hemerocampa leucostigma S. & A.)

- Illinois W. P. Flint (July 21): This insect is quite abundant throughout central Illinois and has occurred in greater numbers in apple orchards than is usually the case. The first-brood larvae are now maturing.

APPLE LEAFHOPPERS (Erythroneura hartii Gill., and E. obliqua Say)

- Arkansas A. J. Ackerman (July 17): These two species of leafhoppers cause considerable injury to apple during most seasons in northwestern Arkansas. The first-brood nymphs were not as abundant as usual this year, because of a late spring with much cool weather and frequent rains. Second-brood nymphs are now hatching and with continued hot weather heavy infestations of hoppers are likely to occur. This is the first season that sprays have been applied for the control of these apple leafhoppers in commercial orchards.

ROSE LEAFHOPPER (Empoa rosae L.)

- Massachusetts A. I. Bourne (July 24): Material which was sent to Dr. E. D. Ball was determined as rosae. These insects have been present in unusually large numbers, many growers stating that the infestation was the worst they had experienced for years.

- Arkansas A. J. Ackerman (July 17): This leafhopper apparently is no longer abundant enough in apple orchards to cause much injury. Evidently the continued use of dormant sprays with oil emulsions has prevented the overwintering eggs of this leafhopper from hatching.

POTATO LEAFHOPPER (Empoasca mali LeB.)

- Arkansas A. J. Ackerman (July 17): The potato leafhopper caused some injury in bearing apple orchards as well as on young apple trees, in 1923, and again this season. Most of the injury results from feeding by the overwintering adults and by the first-brood nymphs. Curling of the terminal leaves followed by the characteristic hopperburn of the tips is evident in most orchards but injury is not severe enough to require a special spray application for this insect.

SAN JOSE SCALE (Aspidiotus perniciosus Comst.)

Indiana

H. F. Pietsz (July 11): A number of cases of spray injury from various parts of the State have been brought to our attention. Both lime-sulphur solution and Bordeaux mixture have caused severe burning in many instances, probably due to the variable climatic conditions, and due to the fact that owing to the lack of sunshine during May and June plants have made an unusually tender growth.

B. A. Porter (July 25): As a result of effective spraying with oil emulsions, most of the commercial orchards in southern Indiana are more nearly free of scale than they have been for several years. In occasional neglected or poorly sprayed orchards the scale is present in about the usual abundance. Along with most everything else, the scale is about two weeks behind schedule, and the second brood of crawlers has not yet appeared at this date.

Kansas

A. J. Ackerman (July 16): Dormant sprays with lubricating-oil emulsions during the past three years in Arkansas apple orchards have proved entirely satisfactory in controlling the San Jose scale. There is only an occasional orchard in the section where any scale-spotting of fruit can be found at the present time.

Wisconsin

S. B. Fracker (July 15): Reported from Ozaukee County attacking apple on this date.

Washington

E. J. Newcomer (July 17): Crawlers of the San Jose scale were first observed on May 25. No unusual infestations have been reported to date.

APPLE FRUIT-CHAFER (Metachroma interruptum Say)

Indiana

B. A. Porter (July 25): A small amount of injury caused by this insect in July in one apple orchard near Decker, not as abundant as last year.

APPLE FLEA-WEEVIL (Orchestes pallicornis Say)

Kansas

A. J. Ackerman (July 17): The apple flea-weevil is more abundant in northwestern Arkansas than in former years and it may be found in practically every orchard of the section. Clean cultivation, which is practiced in most orchards, has prevented the insect from causing serious damage.

PLUM CURCULIO (Conotrachelus nenuphar Hbst.)

Massachusetts

A. I. Bourne (July 24): Not much damage in the western part of the State. Injury in western Middlesex County estimated at 60 per cent of normal; seems to prefer Duchess apples. Unusually serious in Bristol County, 25 to 50 per cent of fruit on well-sprayed trees. In Plymouth County it is the worst orchard pest.

- New York C. R. Crosby and assistants: In Columbia County injury caused by this insect does not appear to be as serious as in previous years. In Dutchess County injury is rather severe in some orchards, and in one orchard 50 per cent of the fruit is injured.
- Wisconsin S. B. Fracker (July 15): Reported from Dodge, Monroe, and Pierce Counties, attacking apple.
- Missouri L. Haseman (July 11): This pest is with us every year but this a real epidemic in the Waverly district. Four curculios on some apples, and is more serious in abundance as compared with an average year.

ROSE LEAF-BEETLE (Nodonota puncticollis Say)

- New York C. R. Crosby and assistants: In Dutchess County this insect has been noted injuring apples and pears but so far the injury has been slight. In Ulster County injury by this insect is rather slight but widespread.
- New Jersey R. B. Lott (July 2): This chrysomelid was doing considerable damage to young fruits on apples, sometimes eating half of apples the size of a walnut.

EUROPEAN RED MITE (Paratetranychus villosus C. & F.)

- Massachusetts A. I. Bourne (July 24): Gradually increasing in numbers. It has now spread to practically every part of the State. In unsprayed orchards or those which were not treated with oil during the dormant season, the pest is occasionally assuming tremendous proportions, and, if this condition of drought persists for any length of time, the effects will in some cases be very marked.
- Connecticut Philip Carman (July 22): Very little work of this pest has so far been seen in New Haven County.
- Indiana B. A. Porter (July 25): Conspicuous injury was noted in one small plum orchard near Decker, on July 24.

PEAR

PEAR SLUG (Colioxa cerasi L.)

- Indiana H. F. Dietz (July 11): Pear and cherry slugs are more abundant this year than at any time during the last five seasons.

CLOVER MITE (Brachybia praetiosa Koch)

- Oregon Don C. Mote (June 21): At Medford damage is severe on pears, according to county agent's report.

PEACH

ORIENTAL FRUIT MOTH (Laspeyresia molesta Busck)

Connecticut

Philip Garman (July 22): Infestation late but rapidly increasing in amount in Fairfield County.

Southeastern
States

A. L. Quaintance: The oriental fruit moth has been determined by State and Federal inspectors to be present in numerous places in Georgia, Alabama, Tennessee, and Mississippi. It has been found in two or three localities in North Carolina.

SOUTHERN GREEN PLANT-BUG (Nezara viridula L.)

Georgia

Oliver I. Snapp (July 1): A ~~known~~ condition of the fruit in a peach orchard at Albany is common, having resulted from the feeding of the southern green plant-bug earlier in the season.

Mississippi

Oliver I. Snapp (July 12): Many peaches in an orchard at Canton have been rendered unmerchantable on account of injury from the southern green plant-bug.

A LANTERN FLY (Fulgoridae)

Georgia

C. H. Alden (June 30): These nymphs were found attacking peach twigs but caused less injury than on the honeysuckle at Fort Valley.

SAY'S BLISTER BEETLE (Pomphopoea sayi Lec.)

New York

C. R. Crosby and assistants: Several outbreaks reported from Ontario County. In Wayne County another orchard was found infested which was not previously reported.

SHOT-HOLE BORER (Scolytus rugulosus Ratz.)

Georgia

O. I. Snapp (June 20): The fruit-tree bark-beetle is reported abundant in northwestern Georgia, and has been found in one orchard attacking apparently perfectly healthy peach trees.

Indiana

J. J. Davis (July 22): Further reports of injury by the shot-hole borer have been received from the southern half of the State and we anticipate further trouble from this source because of the weakened condition of the trees following the severe winter and the recent San Jose scale infestations.

CHERRY

JUNE BEETLES (Phyllophaga spp. and Ligyrus gibbosus DeG.)

Missouri

A. C. Burrill (June 13): So badly stripped two young cherry trees at Jefferson City that the owner came to county agent for advice.

FRUIT-TREE LEAF-BEETLE (Syneta albidula Lec.)

Oregon Don J. Mate (June 14): No adults present now. Many reports of damage, however, at Salem. Quite noticeable on fruit being picked now. The dried feeding puncture lowers the quality of the cherry

PLUM CURCULIO (Conotrachelus nenuphar Hbst.)

Maine Edith M. Patch (July 16): Reported from Bath, attacking Montmorency cherries, not a single one found good.

New York C. R. Crosby and assistants: First injury noted in Chautauque County on June 19, attacking cherry.

CHERRY FRUIT-FLY (Rhagoletis cingulata Loew)

California Weekly News Letter, State of California, Vol. 6, No. 15, July 26: It has been determined by the Director of Agriculture that an insect, a species of Trypetidae, known as the cherry fruit-fly, Rhagoletis cingulata, exists in portions of the State of Oregon, and that cherries are a host fruit of this insect. It has been further determined by the Director of Agriculture that the cherry fruit-fly is now known to exist in that portion of the State of Oregon known as the Dalles section of Wasco County and the Milton-Freewater section of Umatilla County.

CHERRY APHID (Myzus cerasi Fab.)

New York C. R. Crosby and assistants: In Ontario County they were found on both sour and sweet cherries quite commonly.

Wisconsin S. B. Fracker (July 15): Reported from the following counties: Dodge (bad) and Florence, attacking cherry.

PLUM

PLUM CURCULIO (Conotrachelus nenuphar Hbst.)

Indiana H. F. Dietz (June): The plum curculio has been unusually abundant on apples, cherries, and plums.

JOHANNSENOMYIA POLITA

New York C. R. Crosby and assistants: Numerous at Pavilion on the foliage of plum trees.

PLUM PULVINARIA (Pulvinaria amygdali Ckll.)

Kansas J. W. McColloch (July 15): Leaves from a plum tree were received from Wakeeney heavily infested with this scale. This is the first record of this insect from Kansas since 1895 when it was found on a plum at Wichita.
Oregon accor

APHIDIDAE

Wisconsin S. B. Fracker (July 15): Hysteroneura setariae Thos. was reported from Dane, Marinette, and Oconto Counties, while Rhopalosiphum prunifoliae Fitch and Anuraphis cardui L. were reported from Rock and Walworth Counties.

RASPBERRY

RASPBERRY MAGGOT (Phorbia rubivora Coq.)

New York C. R. Crosby and assistants: Infested raspberry canes were received from Greene.

RASPBERRY FRUITWORM (Byturus unicolor Say)

New York C. R. Crosby and assistants: On July 5 this insect was abundant in several fields in Wayne County, attacking raspberries.

RASPBERRY CANE-BORER (Oberea bimaculata Oliv.)

Maine E. M. Patch (July 15): Excessively abundant at Bucksport and Cumberland Center, attacking raspberries and blackberries.

GRAPE

ROSE-CHAFER (Macrodactylus subspinosus Fab.)

Massachusetts A. I. Bourne (July 24): The rose-chaffer has been unusually abundant and, contrary to its usual habits, has turned its attention to a considerable degree to attacking foliage and even young fruits of apple. It would appear that the heaviest damage has been done to orchards in the eastern half of Worcester County, and in Middlesex, although definite reports of this nature were received from orchards in Bristol and Plymouth Counties where, in some cases, the estimated amount of injury to the fruit equalled that done by the red-bug in a normal season.

New Hampshire P. R. Lowry (July 19): Has been very numerous this year at Durham.

New York C. R. Crosby and assistants: In Dutchess County this pest was observed on apple and grape on June 23. Has been doing serious damage to grapes in some cases. At Syracuse, on July 4, they were eating everything in sight, the orchards, vineyards, etc., being overrun with them. In Dutchess County, on July 5, they had caused considerable injury in some vineyards.

Michigan R. H. Pettit (July 22): The rose-chaffer is worse in Michigan than for many years past. This creature is working on ornamentals, apples, grapes, and on most everything else.

GRAPEVINE APHID (Macrosiphum illinoisensis Shinn)

- Mississippi H. W. Allen (July 23): Early in the present month the young terminal shoots of grape were heavily infested with the brown grape aphid at A. & M. College. They have now become greatly reduced in numbers and are difficult to find.

GRAPEPLANE MOTH (Oxyptilus periscelidactylus Fitch)

- New York C. R. Crosby and assistants: Larvae noted in several vineyards in Dutchess County, but are not causing serious damage.

EIGHT-SPOTTED FORESTER (Alypia octomaculata Fab.)

- Indiana H. F. Dietz (July 24): The eight-spotted forester is more abundant than for several years past. It is quite abundant on grape, in the northern half of the State.

GRAPE LEAFHOPPER (Erythroneura comes Say)

- New York C. R. Crosby and assistants: In Chautauqua County this insect has been greatly reduced in numbers by the recent rains and storm so that now they are rather scarce, while in Monroe County they are beginning to become abundant.
- Nebraska M. H. Swenk (June 15-July 10): From Clay County a report of an abundance of the grape leafhopper on woodbine vines was received.

BANDED LEAFHOPPER (Erythroneura tricineta Fitch)

- Texas D. C. Parman (June 25): The banded leafhopper has been doing heavy damage to grape arbors during the last four years and in many cases has killed out all of the vines except the Black Spanish or Mission grape. The leaves usually fall from the vines during the latter part of July or August. The damage this year at this date is apparently more than usual.

CURRENT

CURRENT AND GOOSEBERRY MAGGOT (Epocira canadensis Loew)

- Oregon Don C. Mote (May 23): Ten bushes heavily laden. Picked a quart and almost every currant, green and ripe, is stung, and opening where blight is, found white worm, one-eighth inch in length, at Roseburg.

CURRENT STEM-GIRDLER (Janus integer Norton)

- New York C. R. Crosby and assistants: The tips of over half the young shoots girdled in a number of plantings in Chautauqua County.

CURRENT APHID (Myzus ribis L.)

New York C. R. Crosby and assistants: (June 17): Infested leaves received from Candor. (June 20): In Chautauqua County this insect was observed leaving black currant in great numbers.

Wisconsin S. B. Fracker (July 15): Reported from Dodge (bad), Eau Claire, Marinette, Racine, Rock, Walworth, and Wood Counties, attacking currant.

PECAN

PECAN NUT CASE-BEARER (Acrobasis hebescella Hulst)

Georgia John B. Gill (June 30): The pecan nut case-bearer, Acrobasis hebescella Hulst , has been very destructive in pecan orchards around Racenton, DeWitt, Putney, and Albany, during the present season. The infestation at Thomasville is considerably lighter than that of the Albany district. Much damage has been done by the larvae of the first generation, especially since there was such a small crop of nuts set in most orchards of this general region. The parasitic enemies of this pest are becoming quite abundant at this writing and it is not expected that the second generation will be very large.

Mississippi R. P. Colmer (July 10): In unsprayed orchards the pecan nut case-bearer has caused loss of about half the crop. Where arsenical sprays were used the loss has been controlled to a great degree.

PECAN LEAF CASE-BEARER (Acrobasis nebulella Riley)

Georgia John B. Gill (June 30): The moths of the pecan leaf case-bearer are commonly observed at this time in pecan orchards of southern Georgia. Egg laying has been in progress for several weeks and present indications point to a heavy infestation for another year. Doubtless many growers will spray their orchards during August and September for the control of this insect.

FALL WEBWORM (Hyphantria cunea Drury)

Georgia Oliver I. Snapp (June 23): The fall webworm has started to attack pecans in this section (Perry). Several nests were found today.

John B. Gill (July 17): The fall webworm is occurring in injurious numbers in many pecan orchards of this section (Thomasville). The larvae of the second generation will likely cause considerable damage in unsprayed orchards.

Mississippi

R. P. Colmer (July 10): The fall webworm makes earliest appearance in several years in Jackson County. Persimmon and hickory in woods completely defoliated. Is being controlled in orchards by burning with torches. Damage is great in poorly kept orchards.

K. L. Cockerham (July 15): Severe outbreaks of the fall webworm have occurred much earlier this spring than usual. On June 15 I noted the owner of a 600-acre pecan grove using hired labor to clip egg clusters and broods of young worms from the trees, so severe was the infestation. All through the Gulf Coast section the infestation has been early and in most cases rather severe.

PECAN SPITTLE-BUG (Clastoptera obtusa Say)

Mississippi

R. P. Colmer (June 30): Largest infestation of spittle-bugs in years in Jackson County. Where spraying for pecan scab is practiced, the spittle-bug is controlled completely.

(Phylloxera spp.)

Mississippi

R. W. Harned (July 7): Are still apparently more numerous on pecan trees throughout this State than during any recent year. Many more complaints in regard to these insects have been received this year than at any time in the past. Most of these complaints have been received from the western part of the State.

COSSID BORER (Cossula magnifica Streck.)

Alabama

John B. Gill (July 17): A report from Fowl River states that the hickory cossid borer is doing some damage to orchard pecan trees of that section.

WALNUT CATERPILLAR (Datana intererrima G. & R.)

Georgia

John B. Gill (July 17): Occasional colonies of the walnut caterpillar are observed on pecan trees, but the insect does not appear to be as prevalent as usual for this season of the year.

LITTLE HICKORY APHID (Monellia carvella Fitch)

Georgia

John B. Gill (July 17): The little hickory aphid is now appearing in large numbers on the foliage of pecan trees in that section.

CRANBERRY

CRANBERRY WEEVIL (Anthonomus suturalis Lec.)

Massachusetts

A. I. Bourne (July 24): The cranberry snout-beetle or weevil has been found quite widely distributed over the Cape section and, in a few isolated cases, has caused 90 to 95 per cent injury. This pest, however, covers only a relatively small acreage of bog land in its area of infestation.

BLACK-HEADED CRANBERRY WORM (Rhopobota naevana Hbn.)

Massachusetts A. I. Bourne (July 24): The black-headed fireworm is present in about normal abundance.

ROSE-CHAFER (Macrodactylus subspinosus Fab.)

Massachusetts A. I. Bourne (July 24): Reports from the Cape region, from our cranberry substation, note the abundance of rose-chafers and that they have been even found on cranberry bogs, although no extensive amount of feeding by them has been noted to date.

GIPSY MOTH (Porthetria dispar L.)

Massachusetts A. I. Bourne (July 24): Mr. Lacroix, of the cranberry substation, reports that the gipsy moth larvae are present in considerable abundance on several cranberry bogs in southern Plymouth County, although not to be seen in any great numbers in adjoining woodland or in orchards near by.

TRUCK - CROP INSECTS

MISCELLANEOUS FEEDERS

PAINTED LADY BUTTERFLY (Vanessa cardui L.)

Ohio

T. H. Parks (June 29): These larvae are now devouring Canada thistles in the northwestern quarter of the State. Many counties report thistles being devoured during the last week of June. The larvae are also reported feeding on plantain and timothy to a small extent. Caterpillars were pupating June 29. No migration of butterflies was reported.

Michigan

R. H. Pettit (July 1): This State is, experiencing an outbreak of a butterfly larva which I suspect is Vanessa cardui. The larvae have appeared in the western part of the State in such numbers that they practically covered the ground and have been the occasion of much excitement among county agents and growers who expect the larvae to attack oats, corn, and other valuable crops just as soon as they finish on thistles. The thistles have been completely killed out in many fields and very marked good has been done at the expense of a small amount of peppermint and soybeans. Down in the peppermint belt at Mentha it was necessary to spray some new fields of peppermint in order to save the stand. However, the amount of real damage done by this creature is negligible and the amount of good very great. This larva happens to be here at the time when armyworms are starting in to make trouble and, unfortunately, the two are confused. (July 22): Our larvae ~~on~~ thistles, which proved to be Vanessa cardui, are through working and the adults are now flying. Great good has resulted from the enormous numbers which worked over the State this year.

Indiana

J. H. Davis (July 22): Additional reports on the thistle caterpillar show that this caterpillar occurred throughout the State and attacked especially Canada thistle, burdock, and hollyhock. No injury to cultivated crops has been reported, excepting in one instance the county agricultural agent at Angola, in the extreme northeastern corner of the State, reported injury to a field of tansy.

Indiana

H. F. Dietz (July): The thistle caterpillar was responsible for considerable injury at Indianapolis and other points to ornamental plants such as Mexican thistle (Echinops), bugloss (Anchusa), and hollyhocks.

Illinois

W. P. Flint (July 21): Adults of this species were very abundant in May and the larva was more abundant than ever before recorded from this State. The area over which they occurred in greatest numbers was confined to the northern two-thirds of the State. Larvae were found feeding on dog fennel, thistles of all species, burdock, cocklebur, hollyhock, and sunflowers. In one case larvae of this species almost completely defoliated

6 acres of soybeans. None of the bean plants were killed but the crop received a serious set-back and will probably make a lighter yield than would have been the case had this insect not fed upon it. Parasites are now greatly reducing the numbers of larvae, and while second brood adults are abroad, they are not appearing in large numbers.

Minnesota

A. G. Engles (July 9): Another interesting insect to report is one that is feeding on Canada thistle. This particular one has caused a considerable lot of interest among the farmers in general and we have had a great many specimens sent in with request that we rear the insect and send it out to them to control Canada thistles whenever abundant.

Oregon

Don C. Mole (May 20): Attacking *Amsinckia intermedia*, "fiddle neck," at Medford. (June 4): Report of extensive infestation on Canadian thistles in Benton County. Many larvae found dead, probably caused by some wilt or fungus.

Mexico and Southwest

A. W. Merrill (July 11): Migrating larvae of this butterfly were noted in enormous numbers crossing a desert road in the Yaqui Valley near Cajeme, Sonora, Mexico, on the 3d and 4th of March. No adults were seen at this time. The caterpillars had been feeding on a malvaceous plant resembling, but probably not identical with, *Sphaeralcea angustata*. On March 5 the caterpillars were noted in large numbers on the desert near Gila Bend, Maricopa County, Arizona, and it was feared that they might prove destructive to cotton on ranches in that vicinity.

It was reported that the butterflies had been very abundant for several days preceding my visit at Gila Bend, but on March 5 they were comparatively scarce. Eggs were found on common globe mallow and larvae were found in small numbers on this plant. In the desert the insects had developed principally on an unidentified plant, which was practically stripped of foliage wherever found. On March 23 another brood of adults was appearing in the vicinity of Gila Bend. Eggs were being deposited in large numbers on globe mallow but none could be found on *Sphaeralcea angustata*. Many butterflies were present in the alfalfa fields, but no eggs were being deposited on alfalfa.

Early in May, when stopping at Los Mochis in Sinaloa, Mexico, I noted that the painted lady butterfly was fairly common and that the larvae were common on globe mallow, but no extensive migration of adults, such as occurred in northern Mexico, Arizona, and California, was noted by entomologists stationed in this part of the State of Sinaloa. In the Gila Bend section of Arizona the butterflies did not show any interest in volunteer cotton sprouts.

GARDEN WEBWORM (*Loxostege similalis* Guen.)

Arkansas

T. Roy Reid (June 19): Dwight Isely, associate entomologist, College of Agriculture, has examined a number of the specimens of the insect which have been reported as armyworms. He states that the insect is the garden webworm. A letter I have just received from him states that the garden webworm is covering a widespread area

in the State this year. He found a considerable number of these worms at Fort Smith Tuesday. He also found them in cotton fields visited in Texarkana on Wednesday. They also have been reported in a number of other sections in the State.

SEED-CORN MAGGOT (Eulemyia ciliatula Rond.)

- Ohio E. W. Mendenhall (July 6): This insect destroyed a great deal of seed corn and caused the farmers to replant a great deal of corn in Champaign County.
- Minnesota A. G. Ruggles (July 9): We have had more than the usual number of complaints of the seed-corn maggot, not only working in corn but in some places destroying large areas of beans.

POTATO AND TOMATO

COLORADO POTATO BEETLE (Leptinotarsa decemlineata Say)

- New York L. C. Tyler (June 21): Potato beetles are hatching rapidly in Nassau County and oviposition is heavy.
- Rhode Island A. E. Stene (July 18): The potato beetle seems to be present in fewer numbers than common.
- Indiana C. R. Cleveland (July 8): Nearly full-grown potato beetle larvae were common on tomato at Kempton and some plants were considerably defoliated.
- Wisconsin S. B. Fracker (July 15): Reported from the following counties: Barron, Brown, Crawford, Dodge, Eau Claire, Fond du Lac, Langlade, Oconto, Price, Washington, and Waushara.

POTATO FLEA-BEETLE (Epitrix cucumeris Harr.)

- New York P. H. Allen (July 4): Flea-beetles caused considerable injury to plants in Genesee County.
- D. D. Ward (July 5): Injury reported from a number of localities in Onondaga County.
- North Dakota R. L. Webster (June 28): Foliage of early potatoes at Fargo severely damaged by these beetles.
- Nebraska M. H. Swenk (June 15-July 10): The potato flea-beetle is putting in an appearance in such numbers as to indicate that it will duplicate its serious injury of last season in the potato-growing districts of both the northeastern and western parts of the State.
- Wyoming C. L. Corkins (July 10): This pest is worse than usual this year, but is now checked by spraying. Attacking cucurbits, beans, and potatoes at Wheatland.

POTATO APHID (Macrosiphum solanifolii Ashm.)

- Connecticut M. P. Zappe (July 1): Aphids not very plentiful yet, but are quite heavily parasitized at Branford.

New York

L. C. Tyler (July 5): Aphids are now showing up in quite considerable numbers in Nassau County.

W. B. Davis (July 5): Aphids have been found in several fields in Suffolk County but at present are not in sufficient numbers to cause any trouble.

POTATO LEAFHOPPER (Empoasca mali LeB.)

Wisconsin

S. B. Fracker (July 15): Reported from Jackson County.

BLISTER-BEETLES (Meloidae)

Maine

E. M. Patch (July 5): Report of Macrobasis unicolor from Island Falls states "present in thousands, many hills having from 50 to 100 on them."

Kansas

J. W. McColloch (July 18): Several species of blister-beetles have been reported as stripping the foliage of various garden plants, but particularly potatoes and tomatoes.

TOMATO SUCKFLY (Macrolophus separatus Uhler)

Texas

M. M. High (July 25): The tomato suckfly, which has caused serious injury to tomatoes in certain localities in southern Texas the past few years, has now been reported as far east as Troup. When this insect was first observed in abundance about Brownsville a number of years ago, it was attacking a wild tomato but in recent years it has become a major pest of tomatoes in the lower Rio Grande Valley.

TOMATO FRUITWORM (Heliothis obsoleta Fab.)

Mississippi

M. M. High (July 25): The tomato fruitworm has been unusually abundant on tomatoes, beans, and corn in southern Mississippi this season. It has been found in lesser numbers on several other truck crops. Among the remedies tried arsenate of lead applied straight as a dust and sprayed at the rate of 2 pounds to 50 gallons of water gave about equal results. Free nicotine dust gave very good results early, while the larvae were small and before they entered the fruit, but had little effect on the larvae in the fruit.

CABBAGE

CABBAGE MAGGOT (Hylemyia brassicae Bouche)

New York

C. R. Crosby and assistants: Serious damage to cabbage seed beds by this insect was reported from Ontario, Onondaga, Monroe, and Nassau Counties.

Illinois

C. C. Compton (June 30): The cabbage maggot is more numerous and destructive than usual this year.

Wisconsin

S. B. Fracker (July 15): Reported from Barron County on cabbage and from Oneida on radish.

HARLEQUIN CABBAGE BUG (Murgantia histrionica Hahn)

Missouri W. M. White (July 9): Feeding on horseradish and cauliflower.

STRAWBERRY

STRAWBERRY LEAF-ROLLER (Ancylis comptana Froehl.)

Indiana H. F. Dietz (July 24): The strawberry leaf-roller is apparently not as serious as in past years.

Oregon Don C. Mote (May 24): Twenty per cent of a 3-acre patch of strawberries reported damaged at La Grande, by county agent.

LATE STRAWBERRY SLUG (Empria maculata Norton)

Nebraska M. H. Swenk (June 15-July 10): The late strawberry slug is reported as badly injuring strawberries in Madison County.

STRAWBERRY ROOT-WEEVIL (Brachyrhinus ovatus L.)

Oregon Don C. Mote (June 10): Adults attacking strawberries at Sherwood.

WHITE GRUBS (Phyllophaga spp.)

Indiana J. J. Davis (July 22): Reported injuring strawberries July 16 at Waynetown in Montgomery County.

CLICK-BEETLES (Elateridae)

Massachusetts A. I. Bourne (July 24): We have received one report of a very severe injury to ripening strawberries caused by adult click-beetles. An estimate of the amount of injury to the fruit in one instance places the figure at 75 per cent. The writer stated that quantities of beetles had been taken out of the berries at the time of picking, the beetles having eaten clear into the heart.

ASPARAGUS

ASPARAGUS BEETLE (Crioceris asparagi L.)

New York K. E. Paine (June 21): Some spraying has been done in the control of this pest in Chautauqua County.

Wisconsin S. B. Fracker (July 15): Reported from Brown, Fond du Lac, and Winnebago Counties.

Washington E. J. Newcomer (July 9): Specimens of the eggs, larvae, and adults of this beetle were brought to the writer early in June with the statement that they were common on asparagus in several backyards in the City of Yakima. As far as I have been able to learn, this is the first time this beetle has been found in the State. This information was turned over to the local representative of the State Department of Agriculture, with the suggestion that it

might be possible to eradicate the beetle here. There is a considerable planting of asparagus in the Yakima Valley that would be affected if the beetle should become established.

Oregon

Don C. Mote (June 17): Adults are attacking asparagus at Hubbard.

MEXICAN BEAN BEETLE (Epilachna corrupta Muls.)

Virginia

Neale F. Howard (July 11): A number of reports of damage have come from Wise, Lee, Scott, Russell, and Washington Counties.

West Virginia

W. D. Click through W. E. Rumsey (July 1): A report from Wayne, in Wayne County, is the first of the insect in this State.

Neale F. Howard (July 15): During the early part of the month the insect was reported from Campbell, Boone, Raleigh, Logan, Mingo, and Wayne Counties.

North Carolina

F. Sherman (July 5): The first overwintered adults of the season were sent on June 2. Since then complaints have been frequent and there is every prospect that the damage will be serious throughout our infested area; in Haywood County on June 15 I examined a row of garden snaps which was 43 yards long, finding 30 adults and 41 egg masses. Copulation was occurring, but no larvae yet in evidence.

Georgia

Neale F. Howard (July 15): Reports were received of the presence of the beetle in Chattahoochee, Crawford, Marion, Monroe, and Taylor Counties during the month.

John B. Gill (July 17): The Mexican bean beetle is causing serious damage to bean foliage at Thomasville at this writing. The insect did not seem to develop very rapidly during the early spring, but now larvae and adults may be found quite abundantly in most bean patches within a radius of a few miles from Thomasville. The area of infestation is being materially increased, although the insect does not appear to spread so rapidly in this southern latitude as is the case in other infested sections farther North.

Neale F. Howard (July 21): L. W. Brannon found the beetle in Grady County, adjoining Thomas County, and close to the Florida line. Three hundred and ninety square miles are now covered by the beetle as compared with 250 last year.

Ohio

J. E. Graf (July 12): We have received a complaint from Portsmouth, Scioto County, showing that the Mexican bean beetle is causing a considerable injury to beans in that locality.

Neale F. Howard (July 15): The Mexican bean beetle was found at Circleville. (July 21): The beetle is doing serious damage in Scioto and Pike Counties, where it was not known to occur a year ago. Mr. DeLong reports the completion of the life cycle of the earliest progeny of the overwintered beetles at Columbus.

D. M. DeLong (July 24): Found the Mexican bean beetle at Findlay. This is in Hancock County in the northwestern part of the State about 20 miles from the Michigan border.

Indiana

J. J. Davis (July 22): The first authentic report of the occurrence of the Mexican bean beetle in this State was received July 21, the specimens having been collected by the county agent at Madison July 19. No further information is available on this infestation but the record is authentic as the county agent sent in specimens of larvae which are about two-thirds grown.

Kentucky

H. Garman (July 24): The Mexican bean beetle seems to have taken possession of nearly or quite all of the northern counties in the eastern half of the State during the present season. My latest reports show that it is spreading rapidly and doing a good deal of mischief. Specimens have recently come from Lincoln and Mason Counties and unquestionable information as to its presence in Floyd, Jefferson, and other adjacent counties, showing that it has spread over all our territory from Meade and Simpson Counties on the West to the eastern boundary of the State.

Tennessee

Neale F. Howard (July 21): In the vicinity of Newport the infestation is severe and unsprayed beans are destroyed or heavily infested. Excellent results are being obtained on large acreages again this year with magnesium arsenate used as a spray. Many reports of serious damage have come from other points in eastern Tennessee.

Alabama

Neale F. Howard (July 15): During the month reports of the beetle were received from Elmore and Chambers Counties. (July 21) The infestation is increasing and some fields of beans have been destroyed. In general, the infestation has been lighter than in previous years and some early beans matured without serious injury from the beetle. The survival over the winter in hibernation cages was lower than the previous year.

Mississippi

R. W. Harned (July 7): The Mexican bean beetle has now been found on two properties in the northern part of Lee County. This makes five counties in the northeastern part of the State that are now infested: Itawamba, Tishomingo, Alcorn, Prentiss, and Lee.

Wyoming

C. L. Corkins (July 10): I have neglected to report this pest, which I found upon coming to the State last year. This is apparently, from all records available, the third season here of this new pest. It has extended its range 30 miles north of last year's infestation.

SEED-CORN MAGGOT (*Hylemyia cilicrura* Rond.)

New York

C. R. Crosby (June 19): Infested plants received from Rochester, (July 3): About one-half of bean crop destroyed in some fields at Ithaca. (July 7): A 6-acre field badly damaged at Shortsville.

Michigan

R. H. Pettit (July 22): We have had serious attacks of the bean and seed-corn maggot, worse than any other in several years. Inquiry into conditions shows in most cases that the land was seeded late, owing to our extremely late spring, and that the seed was sown deeply, often with fresh manure applied just before plowing. These conditions are undoubtedly very favorable from the standpoint of the insect. Bean-growers are very prone to blame the work of the bean maggot on the bean weevil and are constantly writing in to get some statement whereby they can place the blame on this other insect and, consequently, claim damages from the seedsman. This mistaken notion on the part of the growers has necessitated the publication of many articles exonerating seedsmen from responsibility in causing the outbreak of maggots.

BEAN TINGITID (Gargaphia iridescens Champ.)

Mexico

R. H. Van Zwaluwenburg (June 25): Eggs and all stages of this insect were abundant on beans near Los Mochis, Sinaloa, in February. Determined by Dr. Carl J. Drake.

PEAS

PEA APHID (Illinoia pisi Kalt.)

Rhode Island

A. E. Stene (July 18): The pea aphid has shown up in a few places in considerable quantities but I have examined a large number of fields of peas where apparently not a single aphid could be found.

New York

L. C. Tyler (June 21): Aphids are becoming very numerous in some plantings in Nassau County.

W. B. Davis (June 28): Rather abundant in certain plantings in Suffolk County.

Wisconsin

J. E. Dudley, Jr. (June 30): Attacking peas in Columbia and Dodge Counties. They are slightly more abundant than normal, considering a late season, and have greatly increased since last month by 1,000 per cent or more. Great abundance of syrphids and coccinellids of several species, each attacking aphid in alfalfa. Fungous disease prevalent in certain fields and has cut aphid down to small fraction of its original numbers in many fields of alfalfa and peas. Syrphids and coccinellids still scarce in pea fields. Unusually cold, wet season, in southern part of State from three to four weeks late. All the way from 15 to 20 per cent of crop destroyed in some pea fields and 90 per cent or over in other pea fields and most alfalfa fields. In one or two alfalfa fields watched constantly the fungous has twice cleaned up aphids and during the last three days it has spread with the greatest rapidity to certain pea fields. High per cent of syrphid larvae found parasitized.

B. B. Fracker (July 15): Reported from Door County.

CUCUMBERS

STRIPED CUCUMBER BEETLE (Diabrotica vittata Fab.)

- Rhode Island A. E. Stene (July 18): The striped cucumber beetle has been quite abundant.
- New York L. C. Tyler (June 21): They are found riddling the foliage of cucumbers, squash, and melons in Nassau County, making it necessary to apply control measures everywhere.
- W. B. Davis (June 28): Present in large numbers in Suffolk County.
- Michigan R. H. Pettit (July 22): The cucumber beetle has appeared in force in the State this year. We have recommended arsenate of soda and gypsum dust which is apparently being used successfully, although some growers seem to prefer using the more expensive nicotine dust and enjoy seeing the immediate discomfiture of the little pests.
- Wisconsin S. B. Fracker (July 15): Reported from the following counties: Barron, Brown, Crawford, Dane, Eau Claire, Fond du Lac, Jackson, Jefferson, Portage, Washington, Waushara, Winnebago, and Wood.
- Nebraska M. H. Swenk (June 15-July 10): On cucurbits the striped cucumber beetle continues more numerous than usual.
- Oregon Don C. Mote (May 22): Attacking cucumbers at Grants Pass.

TWELVE-SPOTTED CUCUMBER-BEETLE (Diabrotica 12-punctata ~~Gyll.~~)

- Indiana H. F. Dietz (June): The twelve-spotted cucumber beetle has been very abundant. In some cases they have riddled young bean plants badly. These beetles have also been found feeding on such unusual things as young peach foliage early in the month. This is due to the fact that its normal food of corn and melons was lacking at the time.

MELONS

MELON APHID (Aphis gossypii Glov.)

- Arkansas A. J. Ackerman (July 17): During the last two weeks several complaints have been received of injury to cantaloupes and water-melons by this aphid.
- Nebraska M. H. Swenk (June 15-July 10): The melon aphid, rather oddly, has not as yet appeared in its usual abundance.

STRIPED CUCUMBER BEETLE (Diabrotica vittata Fab.)

- Arkansas A. J. Ackerman (July 17): Requests are often received at this station for information on the control of this insect from growers of melons. First-brood adults are very numerous now.

SOUTHERN GREEN STINK-BUG (Nezara viridula L.)

Louisiana

Bureau of Entomology Monthly Letter, No. 122 (June): C. E. Smith, of Baton Rouge, reports that the southern green stink-bug has been the cause of severe injury to watermelon and cantaloupe vines in this State. At the time of his visit the insect had largely disappeared but considerable injury had already been caused, the growing tips of the vines having been killed by punctures made by the insect. Cantaloupe vines suffered the heaviest injury.

CUTWORMS (Noctuidae)

Oregon

Don C. Mote (June 3): Cutworms have and are yet doing damage to large areas of watermelon seedlings at The Dalles.

SQUASH

SQUASH BUG (Anasa tristis DeG.)

Massachusetts

A. I. Bourne (July 24): First-instar nymphs of squash bugs were noted here at the College about July 6 and 8. County agent of Middlesex County reports that they have made their appearance on greenhouse cucumbers in considerable quantities, for the first time within his experience.

Nebraska

M. H. Swenk (June 15-July 10): Complaints of injury by the squash bug began to be received during the third week in June.

SQUASH LADY-BEETLE (Epilachna borealis Fab.)

North Carolina

F. Sherman (July 5): This species is now sent in more often than formerly, being often mistaken for the Mexican bean beetle. This mistake is all the more natural by reason of the fact that adults of this species often occur on beans.

SQUASH-VINE BORER (Melittia satyriniformis Huebn.)

Massachusetts

A. I. Bourne (July 24): The first eggs of the squash-vine borer were found in the field here at Amherst on July 5 and from that date on to the present can be found in considerable abundance.

ONIONS

ONION THRIPS (Thrips tabaci Lind.)

Connecticut

R. B. Friend (July 12): Thrips are very numerous on set onions at Wethersfield but injury is not sufficiently severe to wilt the plants.

ONION MAGGOT (Hylemyia antiqua Meig.)

New York

A. G. Newhall (June 28): Unusually abundant this year at Williamson. (July 5): They continue to take an unprecedented toll and the end is not yet in sight as the flies were observed still laying eggs on July 2.

W. D. Davis (July 5): Have caused heavy loss in one field in Suffolk County.

- Wisconsin S. B. Fracker (July 15): Reported from Brown and Oneida Counties.
- Illinois C. C. Compton (July 12): The first brood of onion maggots have severely damaged onion sets in Cook County, causing a loss of 33 per cent to the growers. Second-brood adults are emerging in large numbers at this time.

CELERY

PARSNIP LEAF-MINER (Acidia fratria Loew.)

- Connecticut R. B. Friend (July 12): Very slight infestation at Wethersfield. Probably Acidia fratria Loew. Mines fairly extensive in leaves.

BEETS

SUGAR-BEET WEBWORM (Loxostege sticticalis L.)

- Nebraska M. H. Sventk (June 15-July 10): From Scottsbluff and Kimball Counties come reports of a ~~plentiful~~ of the sugar-beet webworm. The first brood of worms of the year began hatching about June 20 and the species was found developing not only on sugar beets but on several others of its food plants as well.

SUGAR-BEET NEMATODE (Heterodera schachtii Schmidt)

- Utah Geo. F. Knowlton (July 11): Considerable damage is being done to beets in northern Utah by the sugar-beet nematode.

ASH-GRAY BLISTER-BEETLE (Morphosis unicolor Kby.)

- Utah Geo. F. Knowlton (July 15): ~~Maple-leaf~~ blister-beetles are damaging mangels in a few fields at Widtsee.

BEET ROOT APHID (Pemphigus betae Doane)

- Utah Geo. F. Knowlton (July 11): The beet root aphid is present throughout the beet-growing area of the State and certain fields in Lewiston and Cornish are being noticeably affected.

SUGAR-BEET ROOT-MAGGOT (Tetanops aldrichi Hendel)

- Utah Geo. F. Knowlton (July 11): The sugar-beet root-maggot is present throughout the northern part of the State and especially doing damage in Cornish, Lewiston, and Trenton.

SPINACH LEAF-MINER (Pegomya hyoscyami Panz.)

- New York L. C. Tyler (June 28): Plentiful on beets and spinach in some places in Nassau County.

- Connecticut R. B. Friend (July 10): Most of the damage to beets and spinach done by this insect occurred in June around New Haven.

MINT

A FLEA-BEETLE (Halticinae)

Michigan

L. G. Gentner through R. H. Pettit (July 22): I wish to report the finding of a flea-beetle larva on roots of peppermint which has been working for several years back in the plantations of Mr. Todd of Mentha.

FOUR-LINED PLANT-BUG (Poecilocapsus lineatus Fab.)

New York

C. R. Crosby (July 1): A large bed of mint nearly ruined at Buffalo.

SWEET POTATOES

SWEET-POTATO WEEVIL (Cylas formicarius L.)

Mississippi

E. L. Cockerham (July 20): At this period of the year I may safely say that there are less sweet-potato weevils in this State than we have had for several years. This is due in part to severe freezes which reached to the coast last winter and caused a goodly portion of the banked tubers to be frozesh. Seed and plants have been unusually scarce this spring and the crop in this locality is very short as a result. In a great many instances there are no potatoes planted on the individual farms.

SWEET-POTATO LEAF-BEETLE (Typophorus viridicyaneus Crotch)

South Carolina

Philip Luginbill (June 9): Specimens on sweet potato injuring plants near Columbia received on this date.

J. A. Berley (July 8): Reported as doing considerable damage at Blythewood, enough so as to warrant control.

TURNIP

TURNIP APHID (Rhopalosiphum pseudobrassicae Davis)

Mississippi

M. M. High (July 25): Did severe injury to the late turnip crop on the Mississippi Coast.

FLEA-BEETLES (Halticinae)

Mississippi

M. M. High (July 25): The striped turnip flea-beetle has been doing serious injury to turnips on the Mississippi Coast the past month along with Phyllotreta bipustulata Fab. which was found in lesser numbers.

SOUTHERN FIELD-CROP INSECTS

COTTON

BOLL WEEVIL (Anthonomus grandis Boh.)

- North Carolina F. Sherman (July 5): The first specimens on young cotton were found on May 14 in a southern county. The spring emergence has been very light until at this date (July 3) First blooms are appearing with very few fields, if any, having been sufficiently infested to need the "pre-square" applications of ppison. In view of the very light infestation we are emphasizing the gathering and burning of squares, especially in case of those who are not prepared to use the standard dust method later. Our cotton is belated, and the weevils are both belated and scarce; these facts lead us to expect that the dusting point (of 10 per cent) will be reached in most fields later than usual; and that many fields may not need to be dusted, but the continual rains make us uneasy on this point.
- Georgia F. C. Bishopp (July 29): Reports dated July 21 emanating from the county agents in various parts of Georgia show the injury from the boll weevil to be comparatively light, ranging from less than 1 per cent infestation to about 15 per cent.
- Mississippi R. W. Harned (July 7): Boll weevils are apparently less numerous in this State at the present time than at this date during any of the past ten or twelve years. However, there are some boll weevils in cotton fields in every section of the State.
- Oklahoma E. E. Scholl (July 17): The distribution of the cotton boll weevil has been slow up to the present time. The adults of the first brood are now beginning to show some degree of activity and indications are that a large percentage of the second brood will develop successfully because of the fact that we have cloudy and showery weather at the present time. Prof. Sanborn of the College reports some degree of control by parasites and indications are that parasitism will be higher this season than it ever has been.

COTTON LEAFWORM (Alabama argillacea Hubn.)

- Louisiana Geo. A. Maloney (July 23): Report received from Dr. Hunter on this date stating that this insect is present and active at Brownsville and McAllen, Texas. Infestation is reported as light.

COTTON RED SPIDER (Tetranychus telarius L.)

- South Carolina J. A. Berly (July 17): The cotton red spider has attracted attention in various parts of the State though no serious outbreaks have been reported.

SWEET-POTATO BEETLE (Typophorus viridicyaneus Crotch)

- South Carolina J. A. Berly (July 8): Reported feeding on cotton at Anderson.

GARDEN FLEAHOPPER (Halticus citri Ashm.)

J. A. Berly (July 8): Local damage to cotton adjoining alfalfa fields in Fairfield County.

COTTON FLEA (Psallus seriatus Reut.)

F. C. Bishopp (July 29): The cotton flea is reported by correspondents of the Bureau of Agricultural Economics as causing serious injury to cotton in Texas.

COTTON APHID (Aphis gossypii Glov.)

J. A. Berly (July 18): Several inquiries have been received in regard to control from several counties.

Geo. A. Maloney (July 24): Cotton aphids are reported as doing considerable damage to the crop in the vicinity of Port Gibson, Miss., causing serious shedding.

F. C. Bishopp (June): During the latter part of May and early June many fields of cotton in northern Texas were infested with aphids. While they produced considerable curling and discoloration of the leaves they apparently caused no serious damage.

COTTON SQUARE-BORER (Uranotes malinus Hbn.)

J. A. Berly (July 21): Reported from Seneca, Oconee County, as not doing serious damage.

E. E. Scholl (July 17): The cotton square-borer is doing considerably more damage to cotton squares at this time than any other insect in Oklahoma. Parasites are beginning to show up, however, and we hope that the natural control will be complete in a very short time.

COTTON BOLLWORM (Heliothis obsoleta Fab.)

F. Sherman (July 5): For the third consecutive year we have had reports of this species attacking foliage and stems of young cotton plants in early season, occurring in numbers and showing somewhat the habits of armyworms.

COWPEA BOLL WEEVIL (Chalcodermus asneus Boh.)

F. Sherman (July 5): Each year, and especially since the boll weevil invaded the State, this species is sent with reports of its damage to young cotton plants; it severs young stems and leaf-pedicels, but the injury is usually temporary. The insect is often mistaken for the boll weevil of course.

SUGAR CANE

SMALLER SUGAR-CANE MOTH BORER (Chilo loftini Dyar)

Mexico

R. H. Van Zwaluwenburg (June 25): The most important sugar-cane pest in the State of Sinaloa, breeding throughout the year. This year it greatly outnumbered Diatraea lineolata Walk., between 80 and 90 per cent of all stalks being infested, and about 15 per cent of all joints. Infestation practically uniform in plant and ratoon cane. Other hosts are rice, corn, sorghum, para grass, Johnston grass, and a native river-cane. In volunteer rice this spring it was parasitized by Chelonus spp. to the extent of about 23 per cent. In addition two species of Ichneumonidae parasitize it in this locality.

SUGAR-CANE BORER (Diatraea saccharalis Fab.)

Mexico

R. H. Van Zwaluwenburg (June 25): Next to Chilo the most important pest of sugar-cane in western Mexico. Present in somewhat less numbers this past season as compared with the two previous crops. Primarily a pest of plant cane; infestation in ratoons is invariably much lower. Percentage of stalks infested, season of 1924: Fall and spring plant cane, 60 per cent; ratoons (all ages), 36 per cent. Percentage of joints infested: Plant cane, 8 per cent; ratoons, 4 per cent. From October to May it is present in larval and pupal stages only. Earliest emergence of adult noted this year, May 4. Heavily parasitized by Trichogramma minutum Riley which was already at work on eggs of the first generation early in June. A native ichneumonid also parasitizes this species, but only rarely.

A BLACK BEETLE (probably Eleodes omissa borealis Blais.)

California

E. A. McGregor (June 19): Mr. McLaren, manager, took us over a 2,000-acre ranch at Alpaugh, in Tulare County. We had no trouble finding the cause of the alarm. The offender is a large black tenebrionid beetle. The insect is inactive during the daytime, hiding then under the protection of earth clods, clumps of weed, fence rails, old burlap, etc. From our studies it seemed certain that the pest occurred in this field at the rate of easily 10,000 individuals per acre. Of the 2,000 acres in the entire ranch, 80 acres were heavily infested.

The work consists in gnawing the main stem at the crown of the plant, resulting either in the complete severance of the stem or in toppling it over so that the terminal portion dies. Many plants were thus attacked. The encroachment of the pest seemed to take place chiefly from a wild uncultivated area lying to the south and west of the cotton field. The ranch manager claimed that the migration took place from the southwest, and that the individuals advance at a good rate of travel. The greatest concentration of the pest appeared to be among

the weed growth along fence borders, to which points the beetles were said to retreat with the rising of the sun. However, we had no trouble in finding thousands of individuals concealed about the field.

The ranch authorities had applied poisoned bran about 8 a.m. of the day of my visit. This was ill-advised since the pest had mostly become inactive by that time. However, some few individuals were found that had succumbed to this treatment. It gives promise that if applied with the setting of the sun satisfactory control may follow.

Probably the beetles have been forced to attack the cotton, owing to the destruction of the native plants which constitute the natural food of the pest. In addition, the past winter was a very dry one with a resulting scarcity of native plant growth. This would tend to force insects, wintering through, to migrate to cultivated crops for support.

The fact remains that this *Eleodes* occurs at present as a very bad pest of cotton in the Alpaugh district.

FOREST AND SHADE-TREE INSECTS

MISCELLANEOUS FEEDERS

SNOW-WHITE LINDEN MOTH (*Ennomos subsignarius* Hbn.)

Indiana

J. J. Davis (July 22): The adult moths of this insect were reported abundant in the vicinity of Portland on July 14.

PERIODICAL CICADA (*Tibicina septendecim* L.)

BROOD XXIII

Illinois

W. P. Flint (July 21): Brood XXIII of the seventeen-year cicada, 13-year variety, has appeared in nearly all wooded sections of Illinois south of a line drawn through Champaign, and Decatur, Ill., and Hannibal, Mo. In many of the woodlands adults have been sufficiently abundant so that the dead tips of twigs may be easily seen when riding on trains. It has not been excessively abundant, however, and has caused very little injury to orchards or shade trees.

Mississippi

R. W. Harned (July 7): Brood XXIII of the periodical cicada has probably now disappeared in this State. No specimens have been received during the past week. This insect was definitely recorded this year from the following counties: Alcorn, Benton, Bolivar, Calhoun, Coahoma, Carroll, Copiah, DeSoto, Grenada, Holmes, Humphreys, LaFayette, Leake, Lee, Leflore, Madison, Marshall, Montgomery, Pontotoc, Prentiss, Rankin, Sunflower, Tate, Tippah, Union, Yalobusha, Washington, and Yazoo.

BROWN-TAIL MOTH (*Euproctis chrysorrhoea* L.)

New Hampshire

P. R. Lowry (July 19): Found first eggmasses today. This insect is on the increase in southeastern New Hampshire and has stripped a number of orchards at Durham.

WHITE-MARKED TUSSOCK MOTH (Hemerocampa leucostigma S. & A.)

Indiana

J. J. Davis (July 22): The tussock moth has defoliated linden trees in LaFayette during the past few weeks.

H. F. Dietz (July 24): Tussock moth caterpillars are more abundant than for several years, especially noticeable at Indianapolis and Frankfort.

FALL WEBWORM (Hyphantria cunea Drury)

Mississippi

R. W. Harned (July 7): The fall webworm is very rare at the present time in the northeastern part of the State, but is appearing in large numbers in the southern part. During 1922 and 1923 this insect was much more abundant in the northern part of the State than in the southern part. During the last week in May the moths were abundant and numerous egg masses were noticed. Since then the webs have been conspicuous by their absence. It is thought that natural enemies have held them in check.

BAGWORM (Thyridopteryx ephemeraeformis Haw.)

Kansas

J. W. McColloch (July 18): Reports from the following localities have been received during the past month: Lane, injuring pines and cedars; Garnett, stripping foliage of plum, apple, and cherry, with statement that this insect killed the cedars last year; Coldwater, attacking arborvitae. This report indicates that the bagworm is spreading westward in Kansas.

BOXELDER

A LEAF ROLLER

Wyoming

C. L. Corkins (July 10): Have not reared this through for identification yet. Shade trees and other trees in parks are being ruined by this insect. A roller is also doing damage to apple trees, but it may be another species. These are being reared.

CATALPA

CATALPA MIDGE (Cecidomyia catalpae Comst.)

Indiana

J. J. Davis (July 22): Injury to the tips of branches of catalpa were reported from Marion on July 15. The tips of the branches, usually the first node from the terminal growth, showed an infestation of a cecidomyiid larva in cavities inside of the twigs. These are probably the catalpa midge.

CATALPA SPHINX (Ceratomia catalpae Boisd.)

Indiana

H. F. Dietz (July 11): The first generation of the catalpa sphinx seems to be more abundant than usual this year in spots and many trees showed almost complete defoliation by the end of June. The hatching of the eggs of this caterpillar took place about June 5, and the full-grown caterpillars were leaving the trees by the end

of the month. Parasities seemed to be quite scarce on these first-generation caterpillars. One of the common ground-beetles, Scarites subterraneus Fab., was observed to catch the caterpillars after they left the trees, to drag them into the ground, and there to devour them at leisure.

J. J. Davis (July 22): The catalpa sphinx has been reported very abundant throughout the southern two-thirds of the State, occurring in conspicuous and injurious numbers at least as far north as LaFayette.

FOUR-HORNED SPHINX (Ceratomia amyntor Hbn.)

E. W. Mendenhall (July 22): Found the four-horned sphinx infesting catalpa trees in Yellow Springs, Green County. Spraying with arsenate of lead is being used to destroy them.

ELM

EUROPEAN ELM SCALE (Gossyparia spuria Modeer)

H. F. Dietz (July 11): The European elm scale is attracting considerable attention over the whole northern part of Indianapolis in a strip running from 38th Street to 54th Street, and from Millersville across to northern Indianapolis. Inspections were made at Millersville, in northern Indianapolis, and in the vicinity of the State fair grounds. The infestations at Millersville and west of the fair grounds are very heavy. The hatching of this scale began on June 11 and was still in progress on June 30.

M. H. Swenk (June 15-July 10): A second infestation of elms by this scale has been found in Nebraska, this time in the town of McCook, Redwillow County.

WOOLLY ELM APHID (Eriosoma americanum Riley)

R. L. Webster (June 28): At Fargo this insect was attacking elm. Abundance as compared with an average year seemed greater.

ELM LEAF-BEETLE (Galerucella luteola Muell.)

E. W. Mendenhall (July 22): First elm leaf-beetles ever reported from Clark County were found on this date. Found on street trees in New Carlisle. The damage is not very great. They had been found in Dayton some years ago.

R. H. Pettit (July 23): This insect was found at Monroe. Mr. C. L. Burton, county agricultural agent, has just brought in specimens and reports the partial defoliation of a goodly number of elms in the city of Monroe.

ELM LEAF-MINER (Kaliopenusa ulmi Sund.)

P. R. Lowry (June 23): Several camperdown elms severely injured at Bennington.

COCKSCOMB ELM GALL (Colopha ulmicola Fitch)

Indiana

J. J. Davis (July 22): The cockscomb elm gall, mostly Colopha ulmicola, has been received from all parts of the State the past month.

HICKORY

A BORER (Agrilus arcuatus Say)

West
Virginia

Monthly Letter of the Bureau of Entomology, No. 122. (June 1924): Fred E. Brooks, in charge of the Bureau's laboratory at French Creek, W. Va., writes as follows: "Serious injury to young shagbark hickory and pecan trees by Agrilus arcuatus Say has been observed recently in several localities. The larva spends two years in the wood and twice during its life severs the branch or trunk in which it is working. Wood from half an inch to slightly more than an inch in diameter is entirely severed, except the bark, and the part above dies. In one block of young hickory trees in a nursery in Virginia the writer estimated that a hundred dollar's worth of trees had been ruined. Injury very similar in nature and extent to that described above is being done by larvae of Pseudibidion unicolor. This species attacks small hickory and pecan trees and also severs branches of larger trees. In a pecan grove at Petersburg, Va., many fruiting branches were breaking during the month of May as a result of cuts made by the larvae of this species.

SUGAR-MAPLE

MAPLE BORER (Glycobius speciosus Say)

New Hampshire P. R. Lowry (July 9): Sugar-maple shade trees have been severely damaged. Adults are now present in large numbers at Durham.

COTTONY MAPLE SCALE (Fulviaharia vitis L.)

Indiana

J. J. Davis (July 22): The cottony maple scale continues to appear in some localities in abundant and destructive numbers, but apparently is not as abundant as the past few years.

OAK

OAK PRUNER (Elaphidion villosum Fab.)

Michigan

R. H. Pettit (July 22): The oak-twig-pruner is attracting more attention than usual this year.

PINE

PINE SCALE (Chionaspis pinifoliae Fitch)

Indiana

H. F. Dietz (July 11): The pine scale continues to be one of the worst pests of the various kinds of pines and spruces that are used in ornamental planting. The hatching of the eggs of this scale took place during the first week in June and owing to the excessive rainfall the young scales did not have an opportunity to crawl

very far. Hence they settled down near the mother scale in large numbers. This will result in the trees shedding a large number of the infested needles owing to the heavy drain on the food supply.

TIP MOTH (Rhyacionia bushnelli Busck)

Nebraska

T. E. Snyder (July 1): A very serious situation has developed in the plantations of the Nebraska National Forests. Plots established in 1909 showed 53 per cent infestation by the tip moth in the fall of 1913, while the same plot in 1923 showed 63 per cent. Damage was so severe that in many cases trees are being killed. The condition is made more serious by the spread of this insect in shipments of Kinkaid trees which are sent out by the Bessey Nurseries every year. About 16,000 of these trees have been distributed so far, and the infestation is appearing in plantations throughout the State.

The reforestation project in the Sand Hills of western Nebraska is being seriously interfered with by this infestation.

Colorado, New
Mexico and
Arizona

T. E. Snyder (July 1): Mr. Rohwer spent some time in Colorado, National Forests and in National Forests in New Mexico and Arizona and reported that tip moth injury was found throughout this region, but not as serious as in Nebraska. The injury in New Mexico and Arizona is due to another species, probably Rhyacionia neomexicana Dyar.

A SAWFLY (Neodiprion pinetum Norton)

Connecticut

W. E. Britton (July 21): Several trees defoliated at Hamden.

POPLAR

A LEAF-MINER (Phyllocnistis populiella Chamb.)

Oregon

Don C. Mote. For the last two years leaves have been furling and falling off at Fort Klamath.

COTTONWOOD LEAF-BEETLE (Lina scripta Fab.)
et al.

Indiana

H. F. Dietz (July 11): The poplar and willow leaf-beetles, Lina scripta Fab. and Lina interrupta Fab., are abundant on various kinds of willows and poplars. In many places, due to the fact that the adult beetles and their larvae eat off the upper surface of the leaf, leaving the lower epidermis intact, the trees appear as if they were scorched by fire. The second generation of beetles were beginning to appear on June 26.

SATIN MOTH (Stilpnotia salicis L.)

New Hampshire

P. R. Lowry (June 23): This insect has done considerable damage to poplars in Nashua and Portsmouth.

SPRUCE

RED SPIDER (Tetranychus telarius L.)

Nebraska M. H. Swenk (June 10-July 15): During the past week a number of complaints of injury to spruces, cedars, and other evergreen trees by the common red spider have been received from different localities in eastern Nebraska.

SPRUCE BUDWORM (Harmologa fumiferana Clem.)

Idaho Monthly Letter Bureau of Entomology, No. 122 (June 1924): While on a recent examination in the Coeur d'Alene National Forest, H. J. Rust found the spruce budworm becoming well established. One-third to one-half grown larvae were found on white pine, larch, hemlock, white fir, Douglas fir, and Engelmann spruce reproduction. Larvae were also found on large white fir, hemlock, and larch.

CHERMES COOLEYI GILLETTE

Connecticut W. E. Britton (July 18): Large galls noted at Waterbury. Adults emerging.

Oregon Don C. Mote (June 14): Found at Warrendale attacking Douglas fir.

SPRUCE MITE (Paratetranychus unimaculis Jac.)

Connecticut Philip Garman (July 22): Much damage to young trees at New Haven done by this insect.

TULIP TREE SCALE (Toumeyella liriiodendri Gmel.)

Indiana J. J. Davis (July 22): Was reported abundant on tulip trees at New Albany, July 8. The correspondent reported that they were especially conspicuous because they attracted so many other insects.

INSECTS ATTACKING GREENHOUSE

AND ORNAMENTAL PLANTS

MISCELLANEOUS FEEDERS

BLACK VINE WEEVIL (Brachyrhinus sulcatus Fab.)

New York C. R. Crosby (June 27): Slowly killing a few hedge at Glen Cove.

HALTICUS INTERMEDIUS UHL.

Mississippi R. W. Harned (July 7): An insect tentatively determined as Halticus intermedius is causing considerable damage to clematis in Starkville.

BLISTER-BEETLES (Meloidae)

Minnesota

A. G. Ruggles (July 9): One of the most interesting things right now is the abundance of blister-beetles. These are attacking vigorously the Caragana hedges, several of the garden flowers, leaves of hackberry, and in the fields are doing considerable damage to clover and particularly alfalfa. The particular species that is doing the most of the injury is Macrobasis unicolor Kirby.

ZEBRA CATERPILLAR (Mamestra picta Harris)

Indiana

H. F. Dietz (June): The zebra caterpillar is more abundant this year than at any time within the past five seasons. It has been particularly troublesome on cabbage, iris, gladiolus, Swiss chard, and beets.

CORN ROOT-APHID (Aphis maidi-radicis Forbes)

Indiana

H. F. Dietz (June): The corn root-aphid has been found to be an unusually serious pest on ornamental flowers of the composite family. It is also exceedingly abundant on the roots of some weeds such as the common broad-leaf plantain, dandelion, and wild lettuce.

A SAWFLY (Abia americana Cress.)

Connecticut

W. E. Britton (July 18): A honeysuckle bush, Lonicera sp., defoliated by larvae at Thomaston.

NICOTINE SULPHATE INJURY

Indiana

H. F. Dietz (June): Nicotine sulphate at the strength of 1 to 500 with the ordinary soap spreader has caused burning on such plants as sweet peas, nasturtiums, and hardy perennials, owing to the tender growth.

ASTERS

APHIDS (Aphididae)

Indiana

J. J. Davis (July 22): Numerous reports of aphids on the roots of asters have been received from various sections of the State. Some of these no doubt are the common root-aphid but others are one of the common white root-infesting forms, the identity of which has not been determined.

CARNATION

VARIEGATED CUTWORM (Lycophotia margaritosa Haw.)

Maine

E. M. Patch (July 1): A report states "they have bothered us only the past year. They are terrors on carnations." Report was received from Portland.

COLUMBINE

COLUMBINE

COLUMBINE LEAF-MINER (Phytomyza aquilegiae Hardy)

Indiana

J. J. Davis (July 22): The columbine leaf-miner was reported from Fort Wayne as doing considerable damage to columbine July 19. Our observations indicate that this insect has been destructive in other sections of the State the past few weeks.

GOLDENGLOW

A SAWFLY (species undetermined)

Connecticut

W. E. Britton (July 11): Gray black-spotted sawfly larvae had defoliated a large patch of goldenglow at Westport. Most of the larvae had matured and left the plants, but some material was collected for the purpose of rearing adults.

IRIS

IRIS BORER (Macronoctua onusta Grote)

Indiana

H. F. Dietz (June): The Iris borer is again very destructive this year and many complaints have been received during the month from persons who grow iris in ornamental plantings. The damage done by this insect is increased by the fact that it also spreads the root-rot bacterium, which kills the shoot infested by the borer.

PHLOX

RED SPIDER (Tetranychus telarius L.)

Indiana

J. J. Davis (July 22): Red spiders have been very abundant at LaFayette and other sections of the State within the past few weeks, attacking particularly phlox and other flower-garden plants.

ROSE

ROSE CHAFER (Macrodactylus subspinosus Fab.)

New York

Geo. N. Wolcott (July 9): The rose beetle is very abundant here now, attacking roses, daisies, blackberries, black alder, and many other shrubs and trees. It is reported as entirely defoliating hydrangea in a cemetery at Holland Patent.

Nebraska

M. H. Swenk (June 15-July 10): In Chase County the rose-chaffer occurred in heavy flights during the last week in June.

ROSE CURCULIO (Rhynchites bicolor Fab.)

braska

M. H. Swenk (June 15-July 10): The rose curculio was unusually numerous over the State and in Kimball County was reported as puncturing all of the rose buds and blasting them before they opened.

COMMON ROSE SLUG (Caliroa aethiops Fab.)

diana

H. F. Dietz (June): Rose slugs are becoming a serious pest on roses.

braska

M. H. Swenk (June 15-July 10): Roses were very heavily attacked during the last half of June all over southeastern Nebraska by the common rose slug.

gon

Don C. Mote (June 1): Larvae of this insect are numerous at Salem and Corvallis.

I N S E C T S A F F E C T I N G M A N A N D

D O M E S T I C A N I M A L S

MAN

MOSQUITOES (Culex spp.)

diana

H. F. Dietz (June): Due to the unusually wet weather mosquitoes (Culex spp.) have been exceedingly abundant in any place where there is standing water. At Millersville, Muncie, Noblesville, and in various parts of Indianapolis mosquitoes have been so abundant that people have been forced to stay indoors after dark. In shaded localities they are also as much a nuisance in the daytime as at night.

CHIGGERS (Trombicula tlalzahuatl Murray)

as

F. C. Bishopp (June): Chiggers continued to be present in very annoying numbers throughout June. While everyone talks of their abundance and annoyance they are probably no worse than normal at this season of the year.

CAT AND DOG FLEAS (Ctenocephalus felis Bouche &
C. canis Bouche)

NERAL
ATEMENT

F. C. Bishopp (July 29): Have been occurring as household pests in the Atlantic States in an unusual number of cases. A great many complaints have been received from Maryland, Virginia, and Pennsylvania.

CATTLE

STABLE FLY (*Stomoxys calcitrans* L.)

Texas

F. C. Bishopp (June): At Dallas the stable fly was rather annoying to livestock during early June. At Sonora the pest was giving no appreciable annoyance and in the vicinity of Uvalde the abundance was below normal.

D. C. Parman (June 25): The straw or stable fly has become noticeably annoying to livestock in sections where bundle oats have been fed and on a few farms and ranches this fly is doing considerable damage, and as high as 100 or more flies are found on animals. In some cases the animals have wounded themselves fighting the flies and screwworm infestations have followed.

HORN FLY (*Haematobia irritans* L.)

Maryland and
Pennsylvania

F. C. Bishopp (July 29): Horn flies are causing much annoyance to cattle in the mountain regions of western Maryland and Pennsylvania during July.

Texas

F. C. Bishopp (June): Considerable annoyance was experienced in Dallas County due to the horn fly throughout the month of June. The numbers were greatly reduced, however, owing to the hot weather which occurred about the 1st.

D. C. Parman (June 25): The horn fly has decreased considerably throughout the Uvalde section during the month and at present is annoying cattle very little. In the heads of the canyons the flies are most numerous from a few to 500 on cattle; in other sections from 0 to 200 at most.

SCREWORM (*Chrysocya macellaria* Fab.)

Texas

F. C. Bishopp (June): The number of screwworm cases in Texas has been considerably less this spring and summer than usual. Comparatively few cases were reported in the vicinity of Dallas and Sonora up to June 20. At Uvalde and in the hills to the north nearly all ranchmen had some cases, the number ranging up to about 1 or 2 per cent. Some ranchmen who are restocking their pastures with steers took chances with branding and dehorning in June and in these cases the infestation ran from 20 to 50 per cent.

BUFFALO GNATS (*Simulium vittatum* Zett.)

Texas

F. C. Bishopp (June): These insects were found in moderate numbers in the ears of livestock pastured near running streams in Dallas County. The ears of animals were also considerably irritated by the bites of flies, presumably of this species, in Uvalde and Frio Counties.

HORSE-FLIES (Tabanidae).

Washington
D. C.

F. C. Bishopp (July 29): Certain dairymen in the vicinity of Washington D. C. complain of an unprecedented abundance of horseflies. They are so numerous as to cause the cattle to seek protection throughout the day.

HORSES

CANYON HORSE-FLY (Tabanus rubescens Bellardi)

Texas

D. C. Farman (June 25): The canyon Horse-fly has increased some during the month and the infestation in the canyon is about 50 per cent of normal or from 0 to a dozen on animals during the hours of activity, averaging about one to the animal. The number in the lower country is approximately the same as last month or about half as many as in the canyons.

HORSE BOT-FLY (Gastrophilus intestinalis DeG.)

Texas

F. C. Bishopp (June): This species appeared and began laying eggs on horses in Dallas about June 1. On June 20 horses at Reagan Wells were observed to be rather heavily infested with eggs of this species. They are considerably earlier than normal in their appearance this season.

THROAT BOT (Gastrophilus nasalis L.)

Texas

F. C. Bishopp (June): This species appeared and began laying eggs on horses in Dallas about June 1. On June 20 horses at Reagan Wells were observed to be rather heavily infested with eggs of this species. They are considerably earlier than normal in their appearance this season.

GOATS AND SHEEP

LONE STAR TICK (Amblyomma americanum L.)

Texas

F. C. Bishopp (June): Goats and sheep in certain southwestern Texas counties are rather heavily infested with these ticks. In some instances they are undoubtedly responsible for infestations of screwworm.

POULTRY

BUFFALO GNATS (Prosimulium pecuarum Riley)

Nevada

F. C. Bishopp (June): At the end of May reports were received from Fallon to the effect that these gnats were causing serious losses among turkeys and other poultry in that section. Some turkeys were said to be actually killed by the gnats.

EUROPEAN HEN FLEA (Ceratophyllus gallinae Eshrank)

New York

C. R. Crosby (June 3): This insect was sent in from Frewsburg. This is the third record that has been made of the presence of this insect in New York State.

INSECTS INFESTING HOUSES AND
PREMISES

ARGENTINE ANT (Iridomyrmex humilis Mayr)

Mississippi

M. R. Smith (June 30): Two years ago one and a half city blocks in Fayette were found infested with Argentine ants. In the fall of 1922 and the fall of 1923 an Argentine ant campaign was put on by the State Plant Board in cooperation with the city authorities. A very careful investigation on June 23 and 24 revealed no Argentine ants and the writer feels little hesitancy in stating that the ants have been eradicated. Recently this office received Argentine ants from Stafford Springs and from Orvisburg. (July 7): Specimens have just been received from Coffeeville.

PARAOAH'S ANT (Monomorium pharaonis L.)

Mississippi

M. R. Smith (June 30): Paroah's ant is infesting numerous houses in Meridian in which the Argentine ant was formerly the one and only ant pest. This seems to be replacing the Argentine ant.

LITTLE BLACK ANT (Monomorium minimum Buck.)

Mississippi

M. R. Smith (June 30): The tiny black ant is infesting numerous houses in Meridian in which the Argentine ant was formerly the one and only ant pest. This seems to be replacing the Argentine ant.

ANTS (Formicidae)

North Carolina

F. Sherman (July 5): The complaints have been increasing in recent years - usually no specimens are sent and correspondents merely report them as a nuisance in houses, on lawns, etc. A recent complaint is from a hospital. Mention is sometimes made of "small black ants," or "large black ants," or "large red ants," from which it is evident that several species are concerned.

Mississippi

M. R. Smith (July 7): Three species have been found infesting houses on the campus at A. & M. College. In one house were found Iridomyrmex analis Andre and Crematogaster laeviuscula Mayr and at another were found Monomorium minimum Buckley and Camponotus caryae var. decipiens Emery.

AN ANT, "ALBAYALDE" (Wasmannia auropunctata Roger)

Porto Rico

Arthur B. Rosenfeld (June 23): I have observed that the common ant of coffee groves, known locally as the above, is also about the commonest ant in ice boxes, seeming to continue active at surprisingly low temperatures.

AN ANT (Eciton schmitti Emery)

Mississippi

M. R. Smith (July 21): Today the writer saw hundreds of workers which had been killed by a lady by means of insect powder and the \$1,000 guarantee powder. The ants had made a temporary nest under several flowerpots and when discovered were immediately killed.

GERMAN COCKROACH (Blattella germanica L.)

Oregon

Don C. Mote (June 17): In a household at Monroe.

TERMITES (Reticulitermes spp.)

FEDERAL
STATEMENT

T. E. Snyder (July 1): The following are reports of termite damage done to woodwork and contents of buildings in the United States from July 1, 1923, to July 1, 1924:

Alabama	- 2	Mississippi	- 2
Arkansas	- 1	Missouri	- 7
California	- 5	Nebraska	- 1
Connecticut	- 1	New Hampshire	- 1
District of Columbia	21	New Jersey	- 2
Florida	- 5	North Carolina	- 1
Georgia	- 2	New York	- 4
Illinois	- 11	Ohio	- 5
Indiana	- 10	Oklahoma	- 3
Iowa	- 4	Pennsylvania	- 3
Kansas	- 8	Rhode Island	- 1
Kentucky	- 3	South Carolina	- 2
Louisiana	- 4	Tennessee	- 1
Maryland	- 3	Texas	- 5
Massachusetts	- 1	Virginia	- 9
Michigan	- 4	West Virginia	- 1

FLEAS (Siphonaptera)

Indiana

J. J. Davis (July 22): Fleas in barns and in houses have been very abundant as evidenced by the numerous reports received.

SCORPIONS

Texas

F. C. Bishopp (June): During early June several reports were received of the appearance of scorpions in considerable numbers within houses.

EUROPEAN EARWIG (Forficula auricularia L.)

Rhode Island

A. E. Stene (July 18): The only complaint which has reached this office during the present month is of the increased activities in the European earwig colony in Newport. Residents of that city are complaining that the insect is present in unusually large numbers and is beginning to do a great deal of damage.

Notes from the Federal Horticultural Board (July 1):

PESTS INTERCEPTED

1. During the inspection of a shipment of grapes from Argentina at the port of New York, May 13, 1924, there was found a Coccinellid which was identified by Dr. E. A. Schwarz of the Bureau of Entomology as Epilachna paenulata Germ. Dr. Schwarz accompanied the reference slip transmitting the identification with the following pertinent comment: "This is one of the phytophagous species of Coccinellid, the introduction of which into the United States is by no means desirable."
2. A sapodilla taken in the baggage of a passenger arriving in New York May 7, 1924, on the S. S. Surinam from Dominica B. W. I., was found to be infested with larvae of the fruit-fly Anastrepha serpentina Wied. This interception furnished what seems to be the first authentic record of the occurrence of Anastrepha serpentina Wied. in Dominica although there are specimens in the National Museum from Trinidad, W. I., San Juan, P. Cayana, Guat., Ancon, C. Z., and Lima, Peru.
3. In ships' stores in the steamer San Bruno arriving in Boston, April 6, 1924, a mango from Costa Rica was taken which was found to be infested with fruit-fly larvae identified as Anastrepha distans Hendel. This species is noted by the specialist making the determination as being a "rare species."

THE INSECT PEST SURVEY BULLETIN

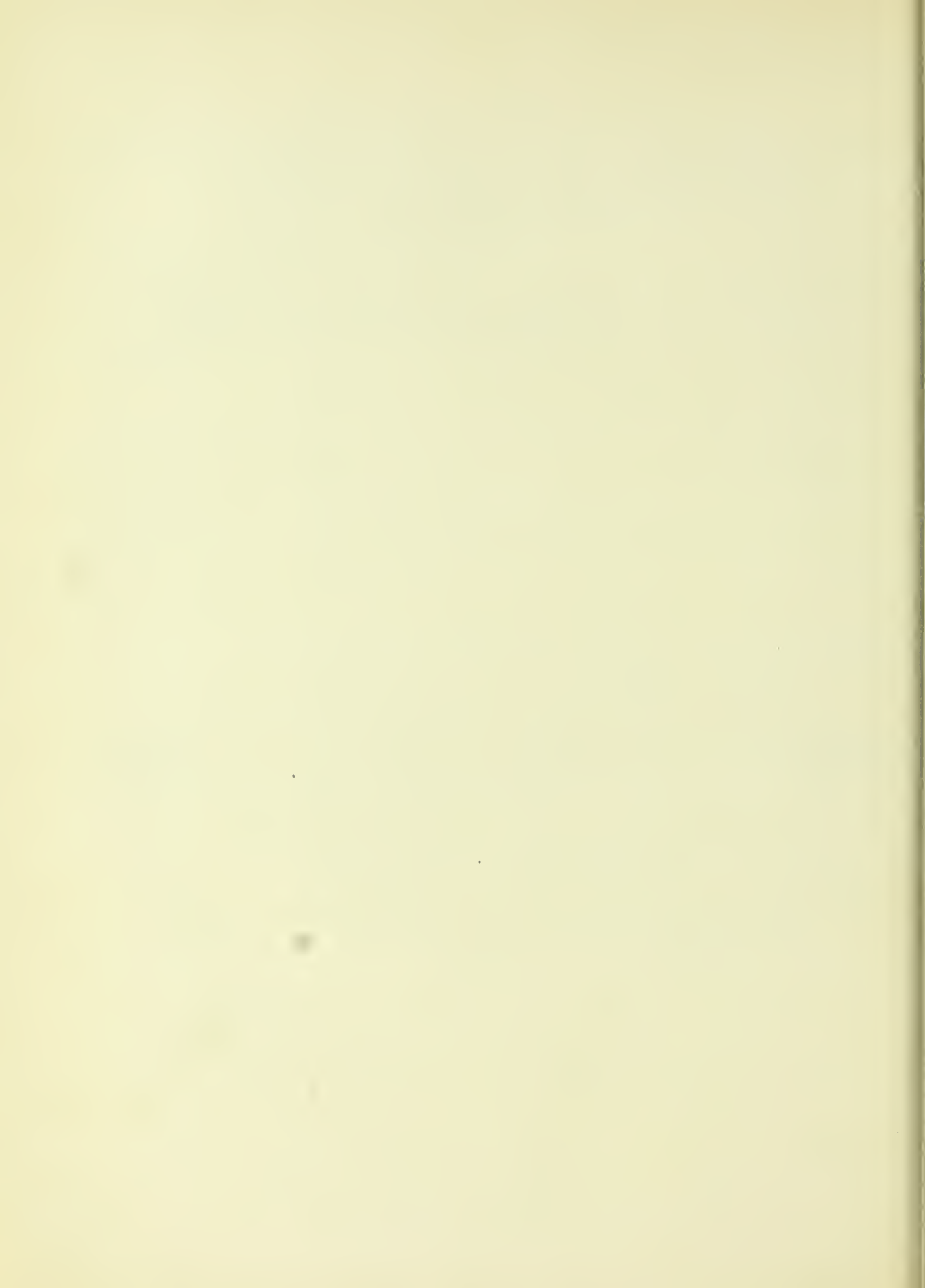
A periodical review of entomological conditions throughout the United States,
issued on the first of each month from April to November, inclusive.

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BUREAU OF ENTOMOLOGY
UNITED STATES
DEPARTMENT OF AGRICULTURE
AND
THE STATE ENTOMOLOGICAL
AGENCIES COOPERATING



OUTSTANDING ENTOMOLOGICAL FEATURES IN THE UNITED STATES FOR AUGUST, 1924

In this number of the Survey Bulletin is a summary of the Hessian fly summer survey from New York State. This indicates a general reduction of infestation throughout the wheat growing section of the State, the infestation in 1923 averaging 8.5 per cent, while this year it averages but 6.4 per cent. In Ohio the infestation has increased in the northeastern counties, in some cases running as high as 10 per cent. Indications of rather serious fly conditions are also reported from Indiana, Illinois, North Dakota and Kansas.

The chinch bug situation remains about the same as last month throughout the later part of the chinch bug belt.

The corn carworm is again appearing in New England. The last outbreak in this region occurred two years ago.

The fall armyworm has already appeared in Kentucky and is doing considerable damage. This early appearance may be the fore-runner of a more general outbreak later in the season.

The western corn rootworm is reported as seriously infesting corn in Missouri and Kansas. The beetles are now cutting the silk.

The Conchuela (Chlorochroa ligata Say) is reported as doing immense damage to the seed crop of alfalfa in the Fort Stockton and Pecos sections of Texas.

Late in July and early in August the green apple aphid was reported as becoming unusually abundant throughout the apple-growing section of New York State.

The variety of the codling moth known as Carpocapsa pomonella simpsonii Busck reared for the first time in the Yakima region of Washington State. Side worm injury by the codling moth is reported as more serious than usual in New England and eastern New York, while in western New York the damage is not as serious as last year.

The apple and thorn skeletonizer is now generally distributed in New England and New York State. In Massachusetts it was serious enough to occasion a special survey; in New York State, as a whole, the insect was less serious than usual.

The painted lady butterfly was reported during the last week in July and the first week in August in unusual numbers in Wisconsin and South Dakota. This is practically the termination of the unusual development of this insect throughout the entire western and central United States, and Mexico.

During the past month the potato leafhopper has been rapidly increasing in Indiana. Some fields, in the west-central part of the State, have been killed.

The Mexican bean beetle by August 25 had extended its range eastward in Virginia to Craig and Carroll Counties, being now nearly half way across the State. In West Virginia it has advanced from the southwestern border of the State eastward to Marshall, Tyler, and Wetzel Counties, covering about three-quarters of the State. In Indiana it is only found along the southeastern border of the State in Floyd, Clark and Jefferson Counties. In Kentucky it extends over practically the entire eastern two-thirds of the State. In Ohio about the southern three-quarters of the State infested, infestations ranging as far west as the southwestern corner of the State in Butler and Hamilton Counties, and northward to Hancock, Wayne, and Tuscarawas Counties. It has just invaded southwestern Pennsylvania, being found in Washington and Green Counties.

The cotton leafworm during the third week in August appeared at several points in Arkansas, and Madison Parish, La., while during the second week of the month it was reported from Alabama. The insect seems to be unusually abundant in Arkansas.

The boll weevil as a whole does not seem to be as destructive as during 1923. The boll worm, on the other hand, is reported as generally more destructive in California and Georgia.

In this number of the Bulletin is published a summary of the past ten years' observations on the abundance of the sugar cane borer in Louisiana.

Bagworm is reported as generally on the increase in western Missouri and eastern Kansas, and is also reported as doing damage in parts of Ohio. In the Ohio River Basin the catalpa sphinx is causing considerable trouble.

The elm leaf-beetle is worse than it has been for several years in western Connecticut and southeastern New York. It is also reported from Michigan, and is reported for the first time from the State of California, where it has appeared in the Fresno district.

OUTSTANDING ENTOMOLOGICAL FEATURES IN CANADA FOR AUGUST, 1924

The grasshopper situation in the Nicola Valley, B. C., where there is an outbreak of the roadside grasshopper, Camnula pellucida Scudder, and the lesser migratory grasshopper, Melanoplus atlanis Riley, is expected to assume more serious proportions in 1925. In the Thompson River Valley, B. C., from Kamloops to Chase, there is a very heavy infestation of Melanoplus atlanis Riley.

Grasshoppers are causing little trouble in Manitoba and southern Alberta this year.

The eye-spotted bud-moth, Spilonota ocellana D. & S., and the green bud moth, Argyroplote variegana Hbn., have been abundant to an unusual degree in the Annapolis Valley, N. S.

The fall cankerworm is gradually increasing in numbers throughout the Annapolis Valley, N. S., and another outbreak is about due.

The spruce sawfly, Diprion abietis Harris, is unusually prevalent in southern Manitoba.

The larch sawfly, Lygaeonematus erichsoni Hartig, has caused serious damage throughout wide areas in New Brunswick.

Green fruit worms of different species have been more abundant in the Annapolis Valley, N. S., this season than for several years previously, and considerable damage to fruit has resulted.

Injury by blister beetles has been reported from nearly all parts of Manitoba, plants chiefly affected being Caragana hedges, potatoes, beans and peas.

The green apple bug, Lygus communis Knight, has been gradually increasing in numbers in the Annapolis Valley, N. S., since 1919, when it was subject to an epidemic of disease. The increase has been most marked during the past year.

The rose curculio, Rhynchites bicolor Fab., has been very injurious to roses throughout Manitoba during the early summer, fully half the blossoms being destroyed on them.

The false chinch bug, Eysius ericae Schill, became a very serious pest in the prairie sections of Alberta during July, injury being done to wheat, radishes, cabbages, blueberries, strawberries and various flowers.

CEREAL AND FORAGE - CROP INSECTS

GENERAL FEEDERS

GRASSHOPPERS (Acridiidae)

Manitoba H. F. Wilson (August 5): We have had a serious outbreak of grasshoppers in the northern part of the State, especially in Door County. Camnula pellucida Scudd. was the most important species, although two or three other species were present.

Nebraska W. J. Baerg (August 4): Melanoplus differentialis Thoms. is causing noticeable injury to corn in Carroll County. Most of the grasshoppers are in the last nymphal instar; a few have reached the adult stage.

Nebraska M. H. Swenk (July 10-August 1): Grasshoppers (Melanoplus bivittatus Say, etc.) developed in injurious numbers in portions of the North Platte Valley, in Scottsbluff County especially, in the White River Valley of Dawes County, and in scattered localities east to Custer and Nuckolls Counties. These pests are, however, as stated in my last report, present in Nebraska this year in subnormal numbers.

Nebraska J. W. McColloch (August 20): Melanoplus atlantis Riley is the predominating species. The second brood began hatching about August 1. Most of the injury thus far reported has been to alfalfa. Watermelons were being destroyed in Harper County, and at Burden the grasshoppers were reported stripping the leaves and bark from a young apple orchard.

Utah Geo. F. Knowlton (July 31): Grasshoppers are not as severe in the State as at this date a year ago. A few sections are having to use poison bait.

WHITE GRUBS (Phyllophaga spp.)

Illinois W. P. Flint (August 26): Reports of white grub damage have been received from many of the central and northern counties. Much damage was reported where corn has followed corn. Apparently the eggs were in many cases laid in corn ground during 1923.

Nebraska M. H. Swenk (July 10-August 1): Next to the chinch bug, the most complained-of insect pest during the period covered by this report has been white grubs. The reports tell of damage to bluegrass lawns, strawberry patches and flower gardens. Practically the whole of the eastern half of the State is more or less affected, owing to an abundance of May beetles flying in the spring of 1923, but the most serious reports have been received from Knox, Garfield, Lancaster, Clay, and Furnas Counties.

Utah Geo. F. Knowlton (August 8): White grubs are doing considerable damage in some sugar beet fields in Cache County. All beets were killed in some sections of certain fields in Benson Ward.

A BEETLE (Ochrosidia (Cyclocephala) sp.)

Illinois W. P. Flint (August 26): Adults appeared in large numbers about lights during the first part of August. At single street lights from 600 to as high as 1,000 beetles were observed by actual count. The flight continued from July 26 to August 4. A few beetles were observed about lights up to August 22. No feeding by the adults was seen, although large trees projected close to street lights. The flight seemed to be confined to east-central Illinois.

WIREWORMS (Elateridae)

Wisconsin H. F. Wilson (August 5): Wireworms were also bad, but we did not get a determination as to the species.

WHEAT

HESSIAN FLY (Eurytoma destructor Say)

New York C. R. Crosby: The Hessian fly survey for the current year covered 26 counties, 8 more than were covered last year. The average infestation for the region covered last year was 8.5 per cent. This year the same region had an infestation of 6.5 per cent, while the average infestation for the 16 counties where counts were made amounted to 5.9 per cent, showing a decided decrease in infestation.

The report by counties is as follows:

Cayuga County	-	5.0 per cent	Ontario County	-	3.5 per cent
Chemung "	-	2.0 " "	Orleans "	-	9.0 " "
Erie "	-	2.4 " "	Oswego "	-	0.0 " "
Genesee "	-	9.1 " "	Schuyler "	-	14.0 " "
Livingston "	-	4.0 " "	Tompkins "	-	4.0 " "
Monroe "	-	3.2 " "	Yates "	-	10.0 " "
Niagara "	-	8.0 " "	Wayne "	-	4.6 " "
Onondaga "	-	5.0 " "	Wyoming "	-	10.4 " "

T. H. Parks (July 28): Hessian fly infestation in Ohio has increased from $4\frac{1}{2}$ to $11\frac{1}{2}$ per cent (infestation of straws) in 31 counties examined. Infestations of 15 to 24 per cent exist in northeastern Ohio counties. Northwestern counties now have the least fly infestation in the State.

C. R. Cleveland (August 18): Conditions thus far indicate emergence of flies on approximately normal dates. Observations continue to indicate a great abundance in early-sown fields this fall.

W. P. Flint (August 26): A state-wide survey covering 34 of the largest wheat-growing counties in the State has shown a state average of 2.3 living fly per single foot of drill row, and the same average for joint worm. The highest average number of fly per foot of drill row occurs in the northwestern part of the State. In Bureau County 4.7 living fly per foot of drill row was found. Fly is less abundant in the southern half of the State, the lowest county showing .2 of living fly per foot of drill row. Development of fly for the season appears to be about normal, apparently there will be no supplementary fall brood of fly this year; fly was present in every county in which this survey was conducted, and in 262 out of 291 fields examined.

H. F. Wilson (August 5): The Hessian fly has been somewhat bad in Door County.

C. W. Ainslie (August 20): Wheat in western North Dakota and eastern Montana is heavily infested with the fly, although during the present season the injury is not apparent, owing to rainfall which, to a certain extent, has enabled injured plants to rally. Fly damage is concurrent with much root rot or scab. In spite of all this the wheat yield will be fair. The fly may cause trouble next year.

J. W. McColloch (August 18): There is still a general infestation of the Hessian fly in Kansas. Plenty of rain during the last month has resulted in lots of volunteer wheat and has caused some emergence of fly. Eggs were found on volunteer wheat during the last week of July.

GREATER WHEAT-STEM MAGGOT (Meromyza americana Fitch)

North Dakota C. N. Ainslie (August 21): This fly is, as usual, placing its eggs freely on blades of the various Agropyrons (A. smithii being the species perhaps most commonly selected). Adult flies can be swept almost anywhere from these grasses. These flies have years ago been observed ovipositing on Agropyron blades, almost invariably placing its solitary egg on the top of the leaf. In North Dakota the egg is deposited near the base of the leaf. Wheat is attacked slightly this year.

WHEAT JOINTWORM (Harmolita tritici Fitch)

North Carolina Bureau of Entomology Monthly Letter No. 123 (July): W. J. Phillips visited Greensboro July 4 to investigate an infestation of the wheat jointworm and found a very abundant occurrence of this insect in the vicinity. An infestation of 100 per cent was found in one field.

Illinois W. P. Flint (August 26): Wheat jointworm is very abundant in the west-central part of the State, in some counties averaging over 14 per foot of drill row.

WHEAT STRAWWORM (Harmolita grandis Riley)

Nebraska M. H. Swenk (July 10-August 1): The wheat crop recently harvested was injured by the wheat strawworm in the vicinity of Marion, Redwillow County, and the vicinity of Benkelman, Dundy County, and possibly in other localities in the southwestern corner of the State. Elsewhere in the State this injury was not observed.

Kansas J. W. McColloch (August 16): A survey in the northwestern part of the State shows a heavy infestation remaining in the stubble. In some fields every straw contains at least one larva. The use of headers and combines in harvesting leaves most of the insects in the field. No definite figures are yet available on the loss occasioned by this insect. The superintendent of the Hays Experiment Station states that the yield was reduced 50 per cent in some fields.

WHEAT SAWFLY BORER (Cephus pygmaeus L.)

New York J. E. Connolly (August 2): Rather heavy infestation noted in Ontario County.

COMMON SMUT BEETLE (Phalacrus politus Melsh.)

Nebraska M. H. Swenk (July 10-August 1): During the second week in July an abundance of the smut beetle was reported from Dawson County.

CORLI

CHINCH BUG (Blissus leucopterus Say)

- Illinois W. P. Flint (August 26): Heavy rains during the latter part of July and the first of August have reduced this insect to a point where practically no injury to corn will occur in Illinois during the present season. There are less bugs at this time than at any time since the summer of 1911.
- North Dakota H. C. Severin (July 30): This pest has become a negligible factor in this State except in isolated places here and there in Charles Mix, Bon Homme, and Douglas Counties.
- Nebraska M. H. Swenk (July 10-August 1): By far the most injurious insect during the period covered by this report has been the chinch bug. The migration from the wheat and barley fields into the corn, beginning from June 25 to July 7, continued until about the middle of July, when it was practically over. The bugs were migrating heavily all through the infested area from July 10 to 15. The infested area continued to be as outlined in my last report of July 10, except that the Furnas and Gosper County infestations proved to extend east into western Phelps County and northeast even to southwestern Buffalo County, in the vicinity of Elm Creek. The infestation in southern (not northern, as stated in error in my report of July 10) Saline County proved to be serious in the vicinity of Western. As thus revised the infested area includes Richardson, Nemaha, Pawnee, Johnson, southwestern Otoe, southeastern Lancaster, Gage, Jefferson, southern Saline, Thayer, Nuckolls, Webster, Franklin, Harlan, Furnas, Gosper, western Phelps, and southwestern Buffalo Counties. Complaint of injury has ceased at the time of preparing this report. No serious chinch bug outbreak has as yet developed in northeastern Nebraska, where the pest was injurious last year, only a few reports of an abundance of the pest having been received, and these all from Knox County.
- Nebraska J. W. McCulloch (August 13): Chinch bugs are abundant in the corn and sorghum fields, although there are few reports of serious damage. A farmer at Lenora reports the loss of 25 acres of milo. Plenty of rain during the last month has been favorable for the development of the fungus.
- Nebraska E. L. Thomas (August 12): Nymphs and adults very abundant upon agronomy test plot to which the insects had migrated from corn.

CORN EARWORM (Heliothis obsoleta Fab.)

- Massachusetts A. I. Bourne (August 20): On August 4 and the succeeding few days we had complaints of the corn earworm on sweet corn. These were the first complaints received since the outbreak of two years ago. Specimens sent in varied considerably in extent of development, but were approximately one-third to one-half grown. One or two fields in this immediate vicinity were reported to be quite heavily attacked. As yet, however, we have had no complaints from other points in the State.

- Georgia J. D. More (June 22): Reported from Calhoun as attacking vetch, corn, and cotton.
- Florida F. S. Chamberlin (August 21): Several fields of running beans near Quincy are being seriously damaged by corn earworm larvae, which confine their attacks mainly to the pods. Field corn at this time is hardening and is unsuitable as food for this pest.

STALK BORER (Parainema nebris nitela Guen.)

- Massachusetts A. I. Bourne (August 20): We have been finding from every lot of material of Parainema nitela which has been collected in this immediate vicinity, or has been sent in to us from other parts of the State, that the larvae are parasitized apparently to an unusually large percentage.
- Nebraska M. H. Swenk (July 10-August 1): The stalk borer continued to be reported as injurious from July 10 to 21. In a few cornfields the injury was serious. Two Cass County fields near the Otoe County line were thinned out quite perceptibly, a couple of fields in Washington County were badly injured, and a Hamilton County cornfield was also thinned out quite seriously through the activities of this pest. Other reports were of injury to tomato plants and flowers.

ARMYWORM (Cirphis unipuncta Haw.)

- Florida T. S. Chamberlin (August 2): A slight infestation of armyworms was observed upon bean foliage on August 2.
- Wisconsin H. F. Wilson (August 5): We have had a serious outbreak of armyworms in the southern part of the State.

FALL ARMYWORM (Lophyrus frugiperda S. & A.)

- Kentucky H. Garman (August 23): Fall armyworm has already appeared in Kentucky and is doing exceptional injury to corn in Christian County. I have had a number of specimens sent to me recently by a correspondent who is very anxious about checking the mischief. This insect generally appears here late in the season and only occasionally attracts attention because of serious mischief. Generally it works on rye and other plants of the same family.
- Mississippi H. W. Allen (August 23): Two heavy infestations of the southern grass worm have appeared at A. & M. College within the past week. In one, a meadow of Johnson grass of about 40 acres, the defoliation ranges from severe to complete. The worms are now beginning to develop the armyworm habit. No damage to corn has as yet been noted.

CORN-LEAF APHID (Aphis maidis Fitch)

Mississippi H. W. Allen (August 18): The corn-leaf aphid is now abundant in the tassel end of late corn, apparently increasing to a considerable degree the stunting resulting from long continued dry weather.

TWELVE-SPOTTED CUCUMBER-BEETLE (Diabrotica 12-punctata Fab.)

Illiana C. R. Cleveland (August 18): Specimens of well-grown corn with nearly full-grown larvae of this species were received from Frankfort and Fowler the second week in August, with the statement that many plants were dying. Injury by the worms, however, while apparent, would not seem to have been severe enough to cause the death of the plants. A combination of this injury with several weeks of extremely dry, hot weather was possibly the cause of the severe injury.

Illinois W. P. Flint (August 26): Damage by this insect has been very severe and much more general than usual. In some fields 90 per cent of the corn showed fallen stalks where counts were taken. In a number of fields in the central part of the State this insect will cut the yield from 5 to in exceptional cases as much as 50 per cent.

WESTERN CORN ROOTWORM (Diabrotica longicornis Say)

Missouri L. Haseman (July 28): Worms vary from one-half to full grown. They are worse than in an average year. Whole fields damaged seriously. (August 22): This worm is causing quite a bit of trouble in some sections of the country.

Kansas J. W. McCulloch (August 16): The adults are reported very abundant in cornfields about Irving. They are cutting off the silks, thus preventing fertilization. Several fields show the work of the larvae earlier in the season. All cases of larval injury are in fields which have been in corn for several years.

A COLLASPID BEETLE (Colaspis favosa Say)

South Dakota H. C. Severin (July 30): Adults feeding on corn, damage being very severe.

EUROPEAN CORN BORER (Pyrausta nubilalis Hübner.)

New York K. E. Faine (July 12): This insect is now laying its eggs, and so far gives promise of being considerably more numerous than last year in Chautauqua County.

PALE-STRIPED FLEA-BEETLE (Systera taeniata var. blanda Melsh.)

Wisconsin

H. F. Wilson (August 5): This flea-beetle caused a great deal of damage to the roots of corn early in the season. Corn planted in fields which were last year in weeds suffered serious damage. A number of larvae were found feeding on the roots of corn, and from these we were able to breed the adult flea-beetle.

ANGULATED FROGHOPPER (Lepyronia quadrangularis Say)

Arkansas

W. J. Baerg (August 4): Lepyronia quadrangularis is causing appreciable injury to corn in Carroll County over an area of several acres. The spittle insects were found in aggregations of 20 to 50 on the undersides of the leaves, in the axils and on the tassels. On a single plant, in some instances, there were more than 100 insects. The corn is located near a field of timothy that had been cut about two weeks ago. From here the spittle insects migrated into the corn.

ALFALFA AND CLOVER

GARDEN WEBWORM (Loxostege similalis Guen.)

Nebraska

M. H. Swenk (July 10-August 1): A local outbreak of the second brood of the alfalfa or garden webworm occurred in Richardson County in the vicinity of Dawson about the middle of July.

ALFALFA NEMATODE (Tylenchus dipsaci Kuhn)

Utah

Geo. F. Knowlton (August 8): The alfalfa nematode has been found doing damage in Salt Lake County and is reported from Uintah Basin. This threatens to be a serious problem in the dairy industry.

CONCHUELA (Chlorochroa ligata Say)

Texas

F. L. Thomas (July 1): Letter received from Fort Stockton states: "Doing immense damage to the seed crop of alfalfa in this section."

COWPEAS

COWPEA CURCULIO (Chalcodermus aeneus Boh.)

Georgia

J. B. Wright (July 14): Reported from Stilson.

LESSER CORN STALK-BORER (Elasmopalpus lignosellus Zell.)

Mississippi

H. W. Allen (August 10): The stand of cowpeas in several fields in the locality of A. & M. College has been considerably reduced by the lesser corn stalk-borer tunneling in and killing the young seedling plants.

GRASS

A SCALE INSECT (Eriococcus sp.?)

Indiana

C. R. Cleveland (August 19): Specimens of a scale, enclosed in an elongate oval white felt-like sac on pasture grass and red top, have been received from Dale and Newburg. The sacs contain the female and masses of eggs. Fields at these points are reported as being heavily infested. The scale has not been identified but appears to be close to the genus Eriococcus.

F R U I T I N S E C T S

APPLE

GREEN APPLE APHID (Aphis pomi DeG.)

York

C. R. Crosby and assistants: The latter half of July and the early part of August have brought considerable increase in the green apple aphid throughout the apple growing sections of the State, both in the Hudson River Valley and in the lake region.

CODLING MOTH (Carpocapsa pomonella L.)

Massachusetts

A. I. Bourne (August 20): Reports have been received from northern Worcester County that side-worm damage by the codling moth is very serious in that whole section, caused by late appearing first brood larvae.

York

C. R. Crosby and assistants: Side-worm injury was not as prevalent as last year in the western part of the State, though rather more severe than usual in the Hudson River Valley.

Illinois

W. F. Flint (August 26): Second brood codling moth has increased in southern Illinois to a considerable extent in unsprayed orchards which average, according to Mr. Chandler's figures, 2 per cent infestation the latter part of June now show about 44 per cent infestation. A much lower percentage was found in the central and northern orchards.

Missouri

L. Haseman (July 28): Second brood of moths and worms seem to be split, forming two broods. Part of the moths at Columbia appeared July 10 to 15 and a part of the brood is still in the pupa stage.

Washington

Monthly Letter, Bureau of Entomology. No. 123 (July): "On July 8," writes E. J. Newcomer, "a specimen of Carpocapsa pomonella var. simpsenii Busch was found in the rearing jars at the Yakima laboratory. This is the only specimen of this variety ever reared at Yakima, although over 16,000 codling moths have been reared since the laboratory was established in 1919."

E. J. Newcomer (July 31): Eggs of the second brood began hatching July 7, which is about two weeks earlier than the average time (August 23): The first moths of the second brood emerged August 16, about two weeks earlier than previously recorded at Yakima. There will probably be a much larger third brood of worms than usual.

RED-HUMPED CATERPILLAR (Schizura concinna S. & A.)

Maine E. M. Patch (August 12): This species has been out of style of late years, but seems to be coming in again. Reported at Vassalboro.

New York A. L. Pierstorff (August 2): Have been observed in small numbers at Honeoye Falls.

YELLOW-HEADED FIREWORM (Peronea minuta Rob.)

Ohio E. W. Mendenhall (August 11): The leaf folder is quite bad in the apple stock in the nurseries in Delaware County.

APPLE AND THORN SKELETONIZER (Hemerophila pariana Clerck)

Massachusetts A. I. Bourne (August 20): During the week of August 4 the second brood larvae of the apple and thorn skeletonizer were advancing pretty well toward maturity here in the Connecticut Valley. Unsprayed and uncared-for trees were browned up nearly as badly as last year. By the succeeding week (August 11) numerous cocoons of this brood were being found. It is apparently working into sprayed orchards more than it did last year. Here at the college it was making its appearance at the time of the second brood in numbers enough to cause serious injury, and appeared to be particularly severe on our blocks of Wealthies. A special spray, applied August 11, checked the pest.

In the western part of Hampshire County the skeletonizer is not particularly abundant.

This pest has made its first appearance this year in Bristol County, where new growth was very badly riddled on many trees, especially in orchards which were not thoroughly sprayed.

Rhode Island A. E. Stene (August 22): I can report that the apple and thorn skeletonizer, of which we found the first moths in the State a year ago last spring, and which was sent in by fruit growers for the first time about August 1, 1923, is apparently widely distributed over the State, although no very striking injury has as yet been caused by the pest.

Connecticut Philip Garman (August 23): Just beginning to appear in any number on apple trees at New Haven. Much less abundant than last year.

M. P. Zappe (August 23): Very little damage being done in the State this year. More abundant around Ridgefield than in center and southern part of State. Very much less than last year.

W York

C. B. Crosby and assistants: In the Hudson River Valley and on Long Island the apple and thorn skeletonizer is not nearly as serious as last year. With the exception of a few neglected orchards they are doing no appreciable injury.

TENT CATERPILIAR (Malacosoma americana Fab.)

Connecticut

W. E. Britton (August 23): Egg clusters very abundant everywhere.

W York

Geo. M. Coddington (August 20): At the present time many egg masses of the tent caterpillar are to be found, a fact which points to a bad outbreak next year unless these egg masses are killed. You may be interested to know that the tent caterpillar has been unusually prevalent throughout Westchester County this year. Whole orchards have been defoliated, as well as trees growing along the roadsides.

FALL WEBWORM (Hyphantria cunea Drury)

ine

E. M. Patch (August 19): Report from Waldoboro states "Abundant."

ssachusetts

A. I. Bourne (August 20): August 8 to 10 the work of the fall webworm was beginning to make itself very apparent. The larvae were at this time about one-third grown.

Mr. Ide, county agent of Bristol County, reports that the fall webworm is somewhat more prevalent than last year in this County.

Mr. Calkins, of northern Worcester County, reports August 14 that this insect's work was just beginning to show.

W York

R. C. Coombs (August 9): In Monroe County nests are quite commonly noted.

io

E. W. Mendenhall (August 15): Fall webworms are quite bad in apple orchards (farm orchards) in Miami County. These could easily be controlled by burning out with a torch.

ssissippi

M. R. Smith (July 29): The fall webworm is fairly common in the southern part of the State, but is by no means as abundant or as serious as last year.

YELLOW-NECKED CATERPILIAR (Datana ministra Drury)

ine

E. M. Patch (August 13): This, like the red-humped caterpillar, has been scarce during recent years.

W York

G. E. R. Hervey (August 9): Considerable damage done in one orchard in Dutchess County.

APPLE MAGGOT (Rhagoletis pomonella Walsh)

New York C. R. Crosby and assistants: Apple maggot seems to be quite general throughout the apple-growing sections of the State. Were emerging during the third week of July.

APPLE LEAFHOPPER (Emboasca nali LeB. et al.)

New York L. C. Tyler (August 9): Common but not serious in Nassau County.

Massachusetts A. I. Bourne (August 20): Mr. Gould, from the western part of Hampshire County, reports that there does not appear to be any particular abundance of apple leafhoppers. This is interesting because of facts which will be brought out later relative to conditions in the eastern part of the State.

Mr. Ide, county agent of Bristol County, reports that leafhoppers in his region are getting more prevalent than at any time during the season, although up to now they do not seem to be causing any serious losses.

In the western half of Middlesex County Mr. Calkins reports that the leafhopper situation is very bad. The species has not been determined. Apparently a new brood of adults is just appearing and has attained considerable numbers.

Missouri L. Haseman (July): Nursery stock is not as generally attacked as last year and damage is not very severe. The leafhoppers are fewer than last year.

SAN JOSE SCALE (Aspidiotus perniciosus Const.)

Indiana B. A. Porter (August 23): Second brood crawlers appeared July 28, two weeks later than normal.

OYSTER-SHELL SCALE (Lepidosaphes ulmi L.)

Massachusetts A. I. Bourne (August 20): August 18 to 20 the over-wintering eggs of the oyster-shell scale were first being deposited.

A MILKWEED CTRAMBYCID (Tetrapores femoratus Lec.)

Kansas J. W. McColloch (August 6): The beetles were found in large numbers on the foliage of apple seedlings in a nursery at Silver Lake. They were feeding on the leaves and causing some injury. The nurserymen had noticed them on milkweeds and had cut out all the weeds, thus forcing the beetles to seek new food plants.

CLOVER MITE (Bryobia praetiosa Koch)

Kansas J. W. McColloch (August 18): The clover mite has caused considerable loss to apples in Sumner County. In many cases the trees have been entirely defoliated.

EUROPEAN RED MITE (Paratetranychus pilosus C. & F.)

Massachusetts

A. I. Bourne (August 20): Unlike last year the European red mite is not showing up to any serious extent in our college orchards or those immediately around here, nor have I seen any orchard which shows serious bronzing anywhere in the vicinity of Amherst.

Mr. Gould, of Williamsburg in the western part of Hampshire County reports that this insect has not made its appearance in any serious numbers.

Mr. Ide, county agent of Bristol County, reports that the mite is increasing in abundance in this county.

Mr. Collins, from northern Worcester County, reports that the mite is present and can be found in slight numbers in almost every orchard but owing to the quite general practice last season of using miscible oils when the leaves were down the pest was apparently so well controlled that it has not become as abundant as last year.

In Middlesex County Mr. Dayton reports that red mite is quite plentiful, and in a few orchards the damage has attained considerable proportions.

Connecticut

Philip Carman (August 23): Still very scarce as compared with last year. Hardly any can be found at New Haven.

Indiana

B. A. Porter (August 23): Moderate injury is apparent in occasional peach and apple orchards through southwestern Indiana.

Washington

E. J. Newcomer (July 31): The European red mite continues to be more numerous than usual on apples, pears, and prunes. Many growers are getting excellent results with weak oil sprays in controlling it. Newly-hatched individuals of the fifth brood were found July 6 nearly four weeks earlier than in 1923. (August 23): Predators have increased rapidly since August 1, and in many orchards where the mites have been numerous they are now hard to find. These predaceous enemies include Scolothrips serraculatus, a small black ladybird (Stethorus punctum), one or two species of predaceous mites (Seius sp.), and a predaceous bug (Triplicleus insidiosus). The first larvae of brood 7 hatched August 17.

PEAR

PEAR PSYLLA (Psylla pyricola Foerst.)

New York

C. R. Crosby and assistants: The rather severe infestation of pear psylla in the Hudson River Valley was materially relieved by heavy rain during early August. In the western part of the State the situation is not at all serious.

PEAR AND CHERRY SLUG (Caliroa cerasi L.)

New York

G. E. R. Hervey (July 19): Doing some injury in one pear orchard in Dutchess County.

A. L. Pierstorff (August 2): Slight infestation noted in one or two orchards at Honeoye Falls.

PEACH

PEACH BORER (Aegeria exitiosa Say)

Utah

Geo. F. Knowlton (July 31): Peach tree borer is heavy in many counties, and farmers in Boxelder County are planning for this fall an extensive treatment with paradichlorobenzene.

SHOT-HOLE BORER (Scolytus rugulosus Ratz.)

Indiana

B. A. Porter (August 23): Very abundant in most of the peach orchards which have been weakened by the past winter. First-brood beetles began emerging July 28.

PLUM CURCULIO (Conotrachelus nenuphar Hbst.)

Georgia

J. B. Gill (July 24): The plum curculio infestation has been unusually heavy on peaches growing around Thomasville. During the past few days many recent egg and feeding punctures have been observed on ripening fruit and very tiny larvae were found in several peaches that were closely examined. These observations seem to indicate that there is a partial second generation of the curculio in this section during the present season.

Indiana

B. A. Porter (August 23): Considerable damage to ripening peach was noted in several orchards near Evansville on August 13.

PEACH-TWIG MOTH (Anarsia lineatella Zell.)

Georgia

P. L. Netterville (July 25): At Madison one came to pupal stage. The adult emerged August 4.

Indiana

B. A. Porter (August 23): While scouting for the oriental peach moth in southern Indiana frequent infestations of the peach-twig borer have been found in neglected trees. Almost no injury in commercial orchards.

Utah

Geo. F. Knowlton (July 31): Peach-twig borers are in the peaches at the present time. Where sprayed at the right time orchards are quite free from injury.

ORIENTAL FRUIT MOTH (Laspeyresia molesta Busck)

Georgia

J. B. Gill (July 24): The occurrence of the oriental peach moth was first reported on July 9 at Thomasville, where it was found attacking the tender shoots and fruit of seedling peach trees. The insect appears to be more abundant in the city limits of Thomasville than in the rural districts immediately adjacent to town. At the writing nearly full grown larvae are found in ripened peaches collected from the ground. The excessive dropping of peaches from seedling trees in this section seems to have been caused by the combined attack of the curculio and brown-rot rather than from the feeding larvae of the oriental peach moth. Larvae have been observed pulling on the bark of trunks and larger limbs of peach trees, as well

as in wooden boxes and lumber on the ground under infested trees. Pupae have also been seen on the outside of peaches while still on the tree, on the old fruit spurs, and in dead leaves that have been stuck to the limbs or branches by means of gum. Adults of this species have been reared at Thomasville on June 18, 19, 23, 24, 25, 29, July 1, 3, 11, 12, 13, 14, and 15. On individual material under observation at Thomasville it was determined that the length of the pupa stage was 7 or 8 days.

TARNISHED PLANT-BUG (Lycus pratensis L.)

York A. L. Pierstorff (July 12): Doing considerable injury to budded stock at Honeoye Falls.

GRAPE LEAF-ROLLER (Desmia funeralis Huebn.)

rgia E. F. Bibby (July 9): Reported in a peach orchard at Fort Valley.

A DYNASTID BEETLE (Strategus antaeus Fab.)

rgia J. D. More (July 9): Adult taken at base of peach tree at Atlanta, but was not saved.

CHERRY

CHERRY APHID (Myzus cerasi Fab.)

consin H. F. Wilson (August 5): The cherry aphid has been more abundant than usual this year all through the State.

CHERRY FRUIT-FLIES (Rhagoletis cingulata Loew and R. fausta)

York C. R. Crosby and assistants: Cherry fruit-fly was generally abundant throughout the State. In Ontario County unsprayed trees ran as high as 60 to 70 per cent infestation. Early Richmonds seemed to show more injury than Montmorencys. In Wayne County the former variety at a canning factory showed 7 per cent of the culls containing fruit-fly maggot, while other factories in the same county ran from 2 to 12 per cent of all the fruit.

RECTION Weekly News Letter, State of California, Vol. 6, No. 15: On page 172, Vol. 4, No. 5, August 1 number, second word on line 7 should read "not" instead of "now."

PLUM CURCULIO (Conotrachelus nenuphar Hbst.)

York W. D. Mills (July 19): Counts made on early Richmond culls (floats, in a canning factory in Wayne County show that 27 per cent of the culls contained curculio larvae. (July 26): Early Richmond at canneries contained from 1 to 8 per cent fruits infested with larvae.

PEAR AND CHERRY SLUG (Caliroa cerasi L.)

New York K. E. Paine (August 9): In some cherry orchards in Chautauqua County this pest is becoming very abundant.

CHERRY LEAFMINER (Proferusa collaris McGill.)

New York A. B. Buchholz (June 14): Doing some damage in Columbia County.

PLUM

PLUM CURCULIO (Conotrachelus nenuphar Hbst.)

New York D. D. Ward (July 12): Most of the fruit in one orchard in Onondaga County was destroyed.

RED SPIDER (Tetranychus telarius L.)

California T. D. Urbahn (July 27): The common red spider is present in such numbers that very severe losses are resulting to the prune crops. Trees are completely defoliated in many orchards. The infestation, favored by a very dry season, is probably the most severe known to the prune industry. Cherries, pears, plums, and almonds are also attacked.

California Weekly News Letter Vol. 6, No. 17 (August 23): Prune orchards, especially, of the Sacramento and San Joaquin Valleys have severely suffered from the attack of the red spider this year. Probably 30 per cent of the prune crop has been seriously damaged by this pest during the present season.

PEAR AND CHERRY SLUG (Caliroa cerasi L.)

South Dakota H. C. Severin (July 30): Very abundant on plum, sand cherry, and almonds. Damage is severe.

GREEN PEACH APHID (Myzus persicae Sultz.)

New York H. W. Fitch (July 12): Is becoming very abundant atodus.

RASPBERRY

STRIPED TREE CRICKET (Cecanthus nigricornis Walk.)

New York R. C. Coombs (July 26): Has done serious damage in one planting in Monroe County.

RASPBERRY CANE-BORER (Oberea bimaculata Oliv.)

Maine E. M. Patch (July 23): A correspondent from Milc writes "breaks at joint -- all branches are about the same."

Hampshire P. R. Lowry (July 23): Several reports of injury to raspberry.
A little more common than last year.

E. W. Mendenhall (August 13): Raspberry plantations near Piqua
are infested quite badly with raspberry cane-borer.

Geo. F. Knowlton (July 31): Raspberry cane-borers are doing damage
to some patches in Davis, Boxelder, and Cache Counties.

BLACK VINE WEEVIL (Brachyrhinus sulcatus Fab.)

hington E. J. Newcomer (August 1): On June 27 a raspberry plantation in
Yakima was found to be very seriously infested with this beetle.
The owner had pulled up most of the plants and reported finding
from 50 to 85 larvae and pupae about the roots of many of them.
On the date of examination the adults were found in large numbers
in the grass under the remaining plants.

CLOVER MITE (Bryobia praetiosa Koch)

h Geo. F. Knowlton (August 8): The brown mite is doing serious
injury to raspberry patches in parts of Cache County and is present
on apple trees and other crops.

GRAPE

ROSE-CHAFER (Macrodactylus subspinosus Fab.)

York C. C. Wagoner (July 26): Very little injury has been reported
except in a few places in Ulster County.

consin H. F. Wilson (August 5): The rose-chaffer was abundant in the sandy
regions of the northwest part of the State. This is the first year
in nine that we have received more than a few specimens. They were
reported as destroying roses, various garden crops, and corn. Just
to what extent damage was done on these plants we do not know.

GRAPE PLUME-MOTH (Oxyptilus periscelidactylus Fitch)

York C. R. Crosby (June 30): Specimens received from Penn Yan.

ABBOT'S SPHINX (Sehecodina abbotti Stains)

Hampshire P. R. Lowry (August 8): Has been sent in from several localities
in the southern half of the State on grape.

GRAPE LEAFHOPPER (Erythroneura comes Say)

York C. R. Crosby and assistants: In the eastern part of the State
there is a moderate infestation, serious enough in places to re-
quire control measures.

Missouri L. Haseman (July): Damage is not noticeable this season, especially in the grape-growing districts.

Texas F. L. Thomas (August 9): A correspondent from Cisco writes: "A new pest to me."

LEAFHOPPERS (Erythroneura octo-notata Walsh, E. vitis Harr., and E. vulnerata Fitch)

Kentucky H. Garman (August 23): Cultivated grapes are now suffering from three leafhoppers. Taking one season with another, these are our most injurious grape insects, though other pests, like the berry moth, are doing their share of mischief in some vineyards.

GRAPE FLEA-BEETLE (Haltica chalybea Ill.)

New York A. L. Pierstorff (July 12): Only a few isolated infestations reported from Honeoye Falls.

GRAPE PHYLLOXERA (Phylloxera vitifoliae Fitch)

Indiana C. R. Cleveland (August 18): Specimens of the leaf-infesting form of this insect have been received from several northern Indiana points.

GRAPE ROOTWORM (Fidia viticida Walsh)

New York A. L. Pierstorff (July 12): Slight infestation noted at Honeoye Falls.

K. E. Faine (July 12): First beetles now emerging in Chautauqua County. (July 19): Beetles are now numerous even on fairly heavy soils. (August 9): Eggs are found in vineyards unsprayed while the beetles have largely disappeared.

CURRENT AND GOOSEBERRY

FOUR-LINED PLANT-BUG (Poecillocapsus lineatus Fab.)

Wisconsin H. F. Wilson (August 5): The four-lined leaf-bug was abundant on currants and gooseberries in some localities. Considerable damage was reported.

GOOSEBERRY FRUITWORM (Zophodia grossulariae Pack.)

South Dakota H. C. Severin (July 30): This is the first time this pest was reported from this State, damage being severe to gooseberries at Aberdeen and vicinity.

MULBERRY

WEST INDIAN PEACH SCALE (Aulacaspis pentagona Targ.)

Georgia Jeff Chaffin (July 12): Reported attacking mulberry.

PECAN

PECAN NUT CASE-BEARER (Acrobasis hebescella Hulst)

rgia J. D. More (June): This pest was reported from Bainbridge, Ashburn, and Tifton during the month.

GENERAL
STATEMENT J. B. Gill (July 24): The pecan nut case-bearer has caused serious damage to the nut crop in pecan orchards from Baconton to Albany, Ga. It has also occurred in injurious numbers at Thomasville, Cairo, Metcalfe, Barwick, Moultrie, Tifton, Clyattsville, Ga., and Monticello, Fla. Reports of damage have also been received from points in Louisiana and Texas.

PECAN LEAF CASE-BEARER (Acrobasis nebulella Riley)

rgia J. D. More (May): Reported from Macon.

rgia J. B. Gill (July 24): The larvae of the pecan leaf case-bearer are and now appearing in large numbers on the foliage of pecan trees throughout South Georgia and North Florida. This insect has also been found to be quite prevalent in the pecan orchards around Baconton, Ga., where it has only recently established itself as a first-class pest.

FALL WEBWORM (Hyphantria cunea Drury)

rgia J. D. More (July): Reported from Decatur.

J. B. Gill (July 24): The nests of the fall webworm are very conspicuous in many pecan orchards in South Georgia and the insect will cause considerable defoliation before the close of the growing season.

PECAN SHUCKWORM (Laspeyresia carvana Fitch)

rgia J. B. Gill (July 24): The pecan shuckworm has been found infesting small green pecan nuts, but the amount of damage done by the larvae at this time is not of much consequence.

LITTLE HICKORY APHID (Monellia carvella Fitch)

rgia J. B. Gill (July 24): For the past few weeks the little hickory aphid has been quite abundant on the foliage of pecan trees at Thomasville.

PECAN BUD-MOTH (Proteopteryx bolliana Sling.)

rgia J. D. More: Reported from Chipley.

SOFT BROWN SCALE (Coccus hesperidum Linn.)

rgia J. D. More (July): Reported from Brunswick on mango and begonia.

TERMITES (Reticulitermes flavipes Kol.)

Texas F. L. Thomas (June 24): Report from Smithville, Bastrop County, states: "They are doing considerable damage to about 300 little pecan trees. These insects work on the root and bore the whole of the inside out, leaving only the bark." Another infestation on pecan seedlings and on cotton at Temple.

AN UNDERVING MOTHS (Catocala agrippina Stlr. form subviridis Harv)

Mississippi R. A. St. George (June 17): This insect has very materially increased in the region about Vicksburg, where it is reported they have an attack every four or five years. The insect has now practically defoliated all the bitter pecan trees in the region.

TRUCK - CROP INSECTS

GENERAL FEEDERS

PAINTED LADY BUTTERFLY (Vanessa cardui L.)

Wisconsin H. F. Wilson (August 5): The painted lady butterfly has been very abundant on Canada thistles, and many inquiries have come in to the office concerning the possibilities of completely eradicating the thistles by propagating the insects.

South Dakota H. C. Severin (July 30): This insect was extremely abundant in South Dakota this year and fed upon Canadian thistle entirely.

SOUTHERN GREEN PLANT-BUG (Nezara viridula L.)

Florida F. S. Chamberlin (August 2): The southern green plant-bug is very abundant upon okra plants at Quincy this season.

BUDWORM (Heliothis virescens Fab.)

Florida F. S. Chamberlin (August 2): A slight infestation of the tobacco budworm was observed upon okra plants on this date. This insect is one of the minor pests of okra in this region.

A MYRIAPOD (Symphyla immaculata Newp.)

Utah George F. Knowlton (July 31): This myriapod is reported as spreading in Davis County this year.

BLISTER BEETLES (Meloidae)

Texas J. W. McColloch (August 20): Several species of blister beetles have been present in the gardens throughout the western two-thirds of the State. The principal damage has been to potatoes and tomatoes. Only one report of injury to alfalfa has been received.

SPRINGTAILS (Achoreutes armatum Nicolet)

Pennsylvania

Bureau of Entomology Monthly Letter, July, 1924: C. H. Popenoe, in charge of the truck-crop insect work at the Silver Spring, Md., laboratory, visited Pomeroy, Pa., and vicinity to investigate an outbreak of insects in mushroom houses. It was first reported that mites were the cause of the trouble, but upon investigation Mr. Popenoe found that springtails were the principal insects concerned. Cooperative experiments with the mushroom growers have been initiated.

POTATOES AND TOMATOES

TOMATO SUCK-FLY (Dicyphus minimus Uhler)

direction

The note which appeared in Volume 4, No. 4, page 129, under the technical name Macroclothus separatus should have appeared under the above technical name.

SOUTHERN ARMYWORM (Prodenia eridania Cram.)

Florida

F. S. Chamberlin (August 21): A small amount of injury is being done on tomato plants by this insect.

SAY'S ELISTER-BEETLE (Pomphoroea sayi Lec.)

New York

C. R. Crosby and assistants: L. C. Tyler reports that on July 12 considerable injury was done in spots in Nassau County by this insect.

POTATO BEETLE (Leptinotarsa decemlineata Say)

New York

C. R. Crosby and assistants: At Honeoye Falls this insect appears to be very numerous this year, while in Onondaga County it is more prevalent than last year. In Genesee County it is quite abundant and most growers are applying control measures.

Wisconsin

H. F. Wilson (August 5): The Colorado potato beetle has been common, but for some reason it has not been as serious at Madison as in normal years.

POTATO FLEA-BEETLE (Epiditrix cucumeris Farr.)

New York

C. R. Crosby and assistants: In Nassau County this insect appears to be very numerous in many late potato fields.

Indiana

C. R. Cleveland (August 19): A brood of these beetles appeared in great numbers on potatoes at the Horticultural Station Farm at LaFayette during the latter half of July. The plants were badly injured, and died rapidly under the combined attack of this insect and leafhoppers.

TOBACCO FLEA-BEETLE (Eolitrix parvula Fab.)

Florida F. S. Chamberlin (August 2): The tobacco flea-beetle is doing severe damage to tomato plants in this locality.

POTATO APHID (Macrosiphum solanifolii Ashm.)

New York C. R. Crosby and assistants: In Suffolk County these insects were increasing in numbers rather rapidly in many fields in this county, while in Nassau County on July 12 they were becoming more serious, although many fields as yet have but a slight infestation. (July 19): The lice have at this date increased in numbers to such an extent that some growers are taking measures against them. (July 26): On this date were not increasing rapidly.

POTATO LEAFHOPPER (Emmeasca mali LeB.)

New York C. R. Crosby and assistants: In Onondaga County on August 9 this insect was becoming numerous in several fields.

LEAFHOPPERS (Jassidae)

Indiana C. R. Cleveland (August 19): Have been rapidly increasing in abundance on potatoes the past month. Some fields at LaFayette have been killed.

TARNISHED PLANT-BUG (Lygus pratensis L.)

Indiana C. R. Cleveland (August 19): The tarnished plant-bug has been reported as seriously injuring potatoes at Fairmount.

SOUTHERN TOBACCO HORNWORM (Protoparce sexta Joh.)

Florida F. S. Chamberlin (August 16): Fall tomato plants are moderately infested with the southern tobacco hornworm.

NORTHERN TOBACCO HORNWORM (Protoparce quinquemaculata Haw.)

New York C. R. Crosby and assistants: In Suffolk County on August 9 this insect was unusually abundant in certain plantings.

CORN EARWORM (Heliothis obsoleta Fab.)

Florida F. S. Chamberlin (August 16): The tomato fruit worm is very abundant here at the present time. A few larvae of H. virescens have also been found feeding upon tomatoes.

CABBAGE

CABBAGE WORM (Pontia rapae L.)

New York C. R. Crosby and assistants: In Suffolk County on August 9, the usual amount of injury is being done, while in Ontario County the insects are gradually increasing in numbers. At Honeoye Falls they are beginning to get numerous, and injury is already apparent.

CABBAGE MAGGOT (Heleuvia brassicae Bouche)

New York C. R. Crosby and assistants: In Suffolk County maggots have nearly ruined one seed-bed.

CABBAGE APHID (Brevicoryne brassicae L.)

New York C. R. Crosby and assistants: In Ontario County considerable infestation was observed on July 26; by August 9 the insects were not very abundant. In Suffolk County they have increased in great numbers during the past week, July 26. In Nassau County on August 1 they were very serious on late seed beds of cabbage and other crops black radish, rutabagas, and other cruciferae being rather heavily infested.

ah George F. Knowlton (August 8): Cabbage aphids are very numerous and are doing damage throughout the State where cabbage is raised.

CABBAGE LOOPER (Autographa brassicae Riley)

New York C. R. Crosby and assistants: In Suffolk County some damage was being done, as usual, on August 9. At Elba also this insect was doing some damage.

STRAWBERRY

STRAWBERRY CROWN-BORER (Tylocderma fragariae Riley)

Missouri L. Haseman (July): This insect is now distributed over the southwestern Missouri berry district and is causing considerable damage to newly-set fields. It appears to be more numerous than last year. (August 4): 40 per cent of the crop damaged to this date.

STRAWBERRY-ROOT WEEVIL (Brachyrhinus ovatus L.)

ah George F. Knowlton (July 31): The strawberry-crown girdler is numerous in some old strawberry beds in Davis and Cache Counties, making it necessary to plow them up.

STRAWBERRY SAWFLY (Empria raculatus Norton)

io E. W. Mendenhall (August 16): The strawberry sawfly was quite bad on rose plants in one of the greenhouses in Springfield this summer. but it was controlled by the use of lead arsenate.

WHITE GRUBS (Phyllophaga sp.)

io E. W. Mendenhall (August 13): The damage done by white grubs is unusually bad this summer on strawberry plantations.

Missouri L. Haseman (July): In one 10-acre patch at Joplin 50 per cent of the newly set plants were destroyed.

Kansas J. W. McCulloch (August 20): Strawberry beds at Ashland and Pao have been killed out by the grub.

BEANS

BEAN LEAF-ROLLER (Eudamus proteus L.)

Florida F. S. Chamberlin (August 21): A considerable number of bean leaf rollers are to be found in bean fields at this time at Quincy.

GREEN CLOVERWORM (Plathypena scabra Fab.)

New York C. R. Crosby and assistants: Considerable damage to pods and blossoms noted in one instance in Suffolk County.

GRASSHOPPERS (Acrididae)

Florida F. S. Chamberlin (August 2): Various species of grasshoppers are damaging bean foliage in the vicinity of Quincy.

GRANULATE CUTWORM (Feltia annexa Treit.)

Florida F. S. Chamberlin (August 6): Cutworm larvae, mainly Feltia annexa are doing much damage to young Kentucky wonder beans in this region.

TWELVE-SPOTTED CUCUMBER-BEETLE (Diabrotica 12-punctata Oliv.)

Florida F. S. Chamberlin (August 16): The twelve-spotted cucumber-beetle is doing considerable damage to bean foliage in fields near Quincy.

MEXICAN BEAN BEETLE (Boilochina corrupta Muls.)

Pennsylvania H. L. Weatherby (August 25): The Mexican bean beetle has been found in Washington and Green Counties.

Virginia Neale F. Howard (August 15): Reported from nine counties in this State.

West Virginia Neale F. Howard (August 15): Reported from fourteen localities in this State.

H. L. Weatherby (August 25): The Mexican bean beetle has been found in Marshall, Tyler, and Wetzel Counties.

South Carolina Neale F. Howard (August 15): Reported from Greenville County.

Georgia John B. Gill (July 24): The Mexican bean beetle is still causing serious damage to beans in this section (Thomasville). It has been observed that both adults and larvae feed extensively on the foliage of snap beans, while the feeding on lima or butter beans seems to be confined largely to the work of the adults.

Ohio Neale F. Howard (August 15): Reported from fourteen localities in this State.

utucky

Neale F. Howard (August 15): Reported from Martin, Warren, Jefferson, Mason, Floyd, and Lincoln Counties.

liana

Neale F. Howard (August 15): Reported from Jefferson, Floyd, and Clark Counties.

J. J. Davis (August 18): On July 26 bean patches were examined in the upland back of New Albany with negative results. Later, found beetles not uncommon on pole string beans at the farm of Thos. Murton, two miles west of New Albany, along the river. Found no eggs, larvae, or pupae, but plenty of evidence of larva feeding, and also empty pupal skins, showing that the beetles developed in this garden. (July 27): Visited farm of R. W. Rankin 9 miles northeast of Madison. Mr. Rankin is the party who submitted the specimens to county agent Thomas, these being the first specimens from Indiana. The infestation was located 9 miles northeast of Madison and 13 miles from the river. There was a heavy infestation in a few feet of row in a bush string bean patch. Majority pupae; some larvae and adults. On return trip to Madison stopped at a field of pole lima beans one-half mile northeast of that city. Here is a heavy infestation causing appreciable injury. Stopped at a patch of pole string beans about 1 mile south of Watson Junction, northeast of Jeffersonville. Found one beetle and some typical eaten foliage, but not common. Did not have an opportunity to examine elsewhere.

C. R. Cleveland (August 19): The occurrence of the Mexican bean beetle reported last month in Jefferson County has since been verified by the personal inspection of Prof. J. J. Davis, who found the beetle abundant enough in some gardens to cause considerable injury to the leaves and pods of garden beans.

BEAN LEAF-BEETLE (Cerotoma trifurcata Foerst.)

orgia

S. V. Brown (June): Infestation said to be severe at Cleveland.

PEAS

PEA APHID (Illinoia pisi Kalt.)

sconsin

H. F. Wilson (August 5): The pea aphid has been extremely numerous and has done a great deal of damage.

J. E. Dudley, Jr. (August 6): General rains practically wiped out the aphid over large areas from the middle to the last of July, and apparently, from reports along the Lake Michigan shore, it has done about the same thing there.

CUCUMBERS

STRIPED CUCUMBER-BEETLE (Diabrotica vittata Fab.)

- Massachusetts A. I. Bourne (August 20): Here at the college the second generation of the striped cucumber-beetle began to make its appearance in the fields approximately the 31st of July. Newly-emerged beetles were seen at this time in considerable numbers.
- New York C. R. Crosby (July 25): Many plants killed at Ira by the larvae in the roots.
- Indiana C. R. Cleveland (August 19): Reports of severe injury to melons and cucumbers and requests for control information continue to be received. In some instances the larvae have killed the plants. Wilt and Mosaic are bad in many fields, especially in small garden plantings.
- Mississippi H. W. Allen (July 29): The adult beetles have been encountered at several places in Winston and Oktibbeha Counties, feeding on the rind of the melon, large areas of which have been thus eaten away and the melons made unmarketable.
- Missouri L. Haseman (July 28): The beetles of apparently the first spring brood have recently emerged in great abundance. The crop is too far advanced to be seriously injured, but they are feeding on the blossoms. Much more abundant than last month.
- South Dakota H. C. Severin (July 30): This insect is present in its usual numbers in South Dakota.
- Nebraska M. H. Swenk (July 10-August 1): Complaints of injury by the striped cucumber-beetle to cucurbits are coming in about normal numbers.

TWELVE-SPOTTED CUCUMBER-BEETLE (Diabrotica 12-punctata Fab.)

- Indiana C. R. Cleveland (August 19): This insect has been unusually abundant the past month at LaFayette, where it has conspicuously injured potatoes, cucumbers, melons, and other garden crops.
- Kansas J. W. McColloch (August 23): Adults are reported feeding on leaves and stems of watermelons. A 40-acre field has been seriously injured.

MELONS

COTTON APHID (Aphis gossypii Glov.)

- New York C. R. Crosby and assistants: In Suffolk County these insects are appearing in some plantings, and one grower reports them as serious.
- Indiana C. R. Cleveland (August 19): The usual reports of serious injury

braska M. H. Swenk (August 1). There continues to be far fewer reports than usual of injury by the melon aphid.

nsas J. W. McColloch (August 16): Considerable injury has been reported during the past month from nearly all sections of the State. The aphids were late in making their appearance this year and the damage is not as severe as last year.

zas O. G. Babcock (August 18): Melons not sprayed were almost completely killed by aphids. The heat increased the damage to nearly 90 per cent. Aphids on melons very bad during the past three weeks.

SQUASH

SQUASH BUG (Anasa tristis DeG.)

ssachusetts A. I. Bourne (August 20): In my report of last month I mentioned information received from Mr. Tillson, County agent of Middlesex County, that the squash bug was making its appearance in considerable numbers on greenhouse cucumbers; the first time in his experience he had seen this type of injury. Further information revealed the fact that squashes were grown between these greenhouses last season, which would at least account for the presence of the bugs in this immediate vicinity. Many of these matured either in or around the greenhouses and later transferred their attention to the cucumbers growing in the ranges. Prof. Koon reports an estimate of 15 per cent loss as a result of this particular outbreak.

braska M. H. Swenk (July 10-August 1): Complaints of injury by the squash bug to cucurbits are coming in at about the normal rate.

ONIONS

ONION THRIPS (Thrips tabaci Lind.)

w York C. R. Crosby and assistants: Are much less abundant since the recent rains in Wayne County.

diana C. R. Cleveland (August 19): More numerous than usual on onions at LaFayette. The tops were badly "blasted" by the first of August.

sconsin J. E. Dudley, Jr. (August 6): Up to the last of July it appeared that severe infestation could be expected in August, and farmers were beginning to make inquiries at the field station. The 4 or 5 inches of rain since August 1, however, have greatly decreased the abundance of thrips, and it is just a case now whether they will again increase to injurious numbers. Probably twice as abundant as in an average year, although not generally distributed.

ah George F. Knowlton (July 31): Is abundant in Davis County, and at Logan its work is noticeable in every patch examined.

BEETS

SPINACH LEAF MINER (Pezomya hvoscyani Panz.)

Massachusetts A. I. Bourne (August 20): Prof. Koon, of our market garden station in Lexington, reports finding the beet leaf miner very abundant in plantings in the town of Waban, where the injury is apparently quite serious.

BEET LEAFHOPPER (Eutettix tenella Baker)

Utah George F. Knowlton (July 31): Was found in most of the beet fields examined in Cache, Boxelder, Davis and Weber Counties, and reports are coming in of damage from this insect. Many fields are from 60 to 90 per cent infected with curly leaf, and some of the farmers are giving up their beets as lost. Injury is usually severe. (August 8): Beet leafhopper in most beet sections of the State. In Eoswell and other places tracts of beets are being plowed up. Many large tracts of beet land are in bad condition and may not be harvested this fall.

SWEET POTATO

SWEET-POTATO LEAF-BEETLE (Tyrcophorus viridicyaneus Crotch)

Georgia J. D. More (June 27): Reported from Atlanta, attacking sweet potatoes.

TWO-STRIPED SWEET-POTATO BEETLE (Cassida bivittata Say)

Georgia C. V. Shirley (July 31): Reported from Fayetteville, and also as doing considerable damage to the farm of Andrew Adams at Kenwood; emerged on 26th.

SWEET POTATO WEEVIL (Cylas formicarius L.)

Florida B. L. Boyden (August 19): Summer inspection in the Baker-Charlton area has been completed and no sweet potato weevils found. Only one infested property has been located since fall inspection in 1922. This was found August 8, 1923.

FALL ARMYWORM (Laphygma frugiperda S. & A.)

Florida B. L. Boyden (August 19): Less damage to sweet potatoes by semi-tropical and fall armyworms has been noted this season than usual, although the worms are becoming more abundant and may do some damage later.

COFFEE-BEAN WEEVIL (Aræperus fasciculatus DeG.)

Florida B. L. Boyden (August 19): The coffee-bean weevil is quite abundant in old sweet potato banks, working in dried and decayed potatoes. Instances of work in solid potatoes have been noted.

SOUTHERN FIELD-CROP INSECTS

COTTON

BOLE WEEVIL (Anthonomus grandis Boh.)

General

B. R. Coad (August 25): The weevil season of 1924 which is now drawing to a close has been a most peculiar one. Emergence over the cotton belt as a whole was generally rather light, with the exception possibly of some extreme southerly points such as the Gulf Coast of Texas. In most of the territory, however, the initial emergence ranged from 1/5 to 1/10 of that of last year. For this reason weevils were quite generally not abundant enough to cause any particular injury to the bottom crops of cotton, which were made during the activities of individuals which had emerged from hibernation. Following this, of course, the question of summer rainfall became the dominant one. Roughly speaking, from Alabama westward the season has generally been very abnormally dry. In many sections there was no precipitation from May until the middle of August, other than purely local showers. This absence of general rains brought about a very high degree of climatic control, which was accentuated by the unusually small plant growth of the season. As a result, throughout this territory weevil damage has been abnormally small. Of course, in almost all localities there are a few fields which for some reason or other produced a more or less normal growth of cotton and had sufficient weevils to do some damage, but these are the exception rather than the rule. For example, in the vicinity of Tallulah, where in a normal season almost every field of cotton is injured somewhat by the weevil, we have not over a half a dozen fields out of more than 500 which are under observation which have experienced any damage whatever from the weevil this season. In all others the combination of low emergence followed by a high degree of climatic control has kept the weevil at such a low ebb that there has been absolutely no crop loss attributable to boll weevil. The recent rains are apparently stimulating multiplication of the weevils somewhat, but the majority of crops are so completely mature that this will have little significance as far as the present season's cotton is concerned, the main question now being the one of weevil abundance for entering hibernation.

The southeastern States, particularly Georgia and South Carolina, had a very different season, experiencing more or less the ordinary rainfall, and weevil damage has been very much heavier, though probably not as heavy as a general rule as has been the case for the past couple of years.

Damage by other insects this season has been, as usual, sporadic and local. Throughout the areas where there has been a shortage of rainfall, both aphids and red spiders have been very exceedingly abundant, as is always the case in dry years, and here and there they have become sufficiently abundant to actually injure the crop. The fall armyworm has been

exceedingly injurious to cotton in many sections this year; in fact, several districts have done considerable poisoning where this species has cleaned up hay crops and then moved on to cotton. There has also been a rather unusual amount of injury by miscellaneous lepidopterous larvae of quite a number of species. All of these outbreaks, however, have been purely local.

The cotton leaf worm appeared early in July along the Gulf coast in Texas, but was held in check partly by climatic conditions and partly by the fact that approximately 50 per cent of the acreage in this territory was being poisoned for boll weevil control. During the past few days numerous reports have been received of the leaf worm, extending up well into northern Arkansas. It is now too late for this worm to do serious damage as a general rule, other than affecting the grade and staple of the cotton, though along the northern edge of the belt the crop is very light and an invasion of the worm any time before first will be a serious matter.

Georgia

John B. Gill (July 24): The Mexican boll weevil is not so destructive this year as in 1923. Cotton is fruiting very well and indications are that satisfactory yields will be obtained in many fields in this section.

BOLLWORM (*Heliothis obsoleta* Fab.)

Georgia

John B. Gill (July 24): The cotton bollworm has been causing some damage to cotton bolls in the vicinity of Thomasville, Ga. It is reported that this insect is not readily controlled by the calcium arsenate dust as used for the boll weevil.

California

T. D. Urbahns (July 24): Upon inspection of cotton fields on the California side of the Yuma Valley the boll worm was found to be destroying many bolls. Present indications pointed to considerable loss before maturity of the crop.

COTTON LEAFWORM (*Alabama argillacea* Huebn.)

Alabama

J. M. Robinson (telegram dated August 11): Cotton leafworm adult taken at Auburn on August 6th. Greenish larvae found on the 9th. Adult received from Guntersville on the 9th. Notifying all county agents today.

Arkansas

Dwight Isley (August 13): Half-grown larvae of cotton leafworm collected in Lee County on August 14, and in Lincoln County on August 15.

Louisiana and
Arkansas

W. D. Hunter (telegram dated August 25): Received reliable reports of cotton leafworm from five points in Arkansas and from Madison Parish in Louisiana. The Arkansas infestation is reported as being heavy.

Texas

W. D. Hunter (August 14): The leafworm first appeared in the United States this season during the first few days of July, about a month later than in 1923. The first worms were found in Calhoun County, on the coast of Texas. A few days later a few infestations were reported from Calhoun County southward along the coast to Brownsville.

The infestations have been exceedingly slight. Inspectors who have been in the field for several weeks report that no fields have been completely defoliated. The most extreme damage noted anywhere is in the vicinity of Brownsville, where an occasional field has been partly defoliated in patches. Generally speaking, the insect is just about maintaining its status and is not increasing the intensity of the infestation, or spreading.

The reasons for the failure of the insect to spread are several. In the first place, there are large quantities of arsenicals available throughout the invaded region. This has made it possible for farmers whose cotton was not poisoned to obtain arsenicals and check the infestation at the beginning. The third and probably most important factor operating has been an extreme and protracted drouth.

CORN-SILK BEETLE (Luperodes varicornis Lec.)

Georgia

Watson Usery (July 7): At Thomson this insect is said to be doing considerable damage to the edge of a field.

FULLER'S ROSE BEETLE (Pantomorus fulleri Horn)

Georgia

J. D. More: Reported from Palmetto on June 17, Cartersville June 24, and Raleigh on June 30, attacking cotton.

COUPEA CURCULIO (Chalcodermus aeneus Boh.)

Georgia

J. D. More (June 25): Reported by Ralph S. Collier at Comer on this date as attacking cotton.

A WEEVIL (Lixus sylvius Lec.)

Georgia

J. D. More (July 21): T. J. Hamil on July 21 reports this insect attacking cotton and breeding in ragwood at Cleveland, Ga.

MELON APHID (Aphis gossypii Glov.)

Georgia

J. D. More (July 15): J. L. Tyre, on July 15, reports this insect attacking cotton at Mt. Vernon, and also at Harlem.

COTTON CUTWORM (Prodenia ornithogalli Guen.)

Georgia

J. D. More (July 15): Reported from Americus attacking cotton a single larva taken.

COTTON RED SPIDER (*Tetranychus telarius* L.)

Georgia

J. D. More (July 10): F. A. Squirefield reports from Wrightsville this insect attacking cotton on this date.

CONCHUELA (*Chlorachira ligata* Say)

Texas

W. D. Hunter (August 21): Reported that "Conchuela" had recently been doing considerable damage to cotton in the Pecos Valley in western Texas. It had made its way into cotton fields from alfalfa, where it had been unusually abundant at the time of the cutting of the hay crop.

SUGAR CANE

SUGAR-CANE BORER (*Diatraea saccharalis crambidoides* Grt.)

Louisiana

T. E. Holloway and W. E. Halby The following figures represent the annual percentage infestation of sugar-cane borer in the several cane growing parishes of Louisiana over a period of 10 years, and are presented here for the use of workers in other regions. The percentage was obtained by examining 200 stalks at random per field, and represents the percentage of canes bored. The number of fields examined in a Parish varied from 1 to 39, the average being 5.5, and the Parish average given below is the mean of the field averages of that Parish.

Parishes

1912 1913 1914 1915 1916 1917 1918 1919 1920 1921 1922 1923

[illegible]

FOREST AND SHADE - TREE INSECTS

GENERAL FEEDERS

GIPSY MOTH (Porthesia dispar L.)

New Hampshire P. R. Levy (August): Much less common than normally, there having been no woodland defoliation in the State, as far as I know.

FALL WEBWORM (Hyphantria cunea Drury)

Connecticut M. P. Zappe (August 23): Webs of the fall webworm do not seem to be very abundant this year, and are not as plentiful as last year.

PERIODICAL CICADA (Tibicen septendecim L.)

New York W. T. Davis (August 4): Relative to the 17-year cicada on Staten Island, in 1924, I can state that on June 23 I heard about 6 singing in the woods immediately south of the railroad station at Oakwood Heights. I saw two of the males, and climbed up the small trees after them, but they flew away, owing to the jarring of the trees. Morris Gerst has given me the right fore wing of a 17-year cicada found by him at West New Brighton, also on June 23, and Charles P. Benedict reported that he had heard several singing in June in the trees about his home at West New Brighton. Frederick M. Schott also heard about a dozen singing at Bear Mt., New York, in June.

New Jersey W. T. Davis (August 4): At Murray Hill, on June 16, Frederick M. Schott found a dead 17-year cicada, which he has given me, and on June 24, he found a few at Califon, N.J. As in 1907, the specimens do not appear to have been numerous in this vicinity.

Georgia J. D. More (August 18): It is also noteworthy that with this exception of a single report made by Mr. Chaffin, on July 10, of the 13-year old cicada said to be found at Savannah no other information was received concerning this pest, although letters of warning were sent to the various county agents at places where it might have been expected that it would appear. No specimens of these cicada were forwarded to the Atlanta office.

WHITE MARKED TUSSOCK-MOTH (Hemerocampa leucostigma S. & A.)

Indiana C. R. Cleveland (August 19): Is unusually abundant at LaFayette.

BAGWORM (Thyridopteryx ephemeraeformis Haw.)

- Ohio E. W. Mendenhall (August 11): The bagworm is quite bad in Montgomery County. I find some apple orchards eaten up with this pest. Advise spraying with lead arsenate. (August 16): The American arbor vitas are badly infested with bagworm in one locality north of Springfield, Ohio.
- Missouri L. Haseman (August 22): These worms work on the trees until the branches are withered and dead and several large trees are reported to have been killed out right, in the western part of this State.
- Kansas J. W. McCulloch (August 20): Bagworm injury is on the increase over the eastern quarter of the State and many trees are being killed. Injury has been reported on cedars, pines, arbor vitae, plum, apple, cherry, boxelder, elm and maple.

FALL CANKERWORM (Aisopha pometaria Harr.)

- New York Geo. M. Coddling (August 20): The outbreak of the canker worm which we had this year is the worst that has ever been known. It defoliated whole sections and was not in the least particular which trees it attacked. Anything that was green seemed to be eaten. We sprayed trees and shrubs which were never sprayed before in combating this pest.

ELM SPANWORM (Enacnos subsignarius Huebn.)

- New York C. R. Crosby and assistants: W. T. M. Forbes reported on July 23 that a very heavy flight of moths were observed at Ithaca.

BIRCH

A SAWFLY LEAF MINER (species undetermined)

- New York E. P. Felt (July 28): An unknown sawfly leaf miner of gray birch was abundant and widely distributed in the Hudson Valley, sprout birches having their leaves somewhat abundantly disfigured by the rather large mines. The work of this insect was first noted in 1923.

CAMPHOR

CAMPHOR THRIPS (Cryptothrips floridensis Watson)

- Georgia John B. Gill (July 24): The camphor thrips is again manifesting itself as a serious pest on camphor trees in this section (Thomasville). Last year this species caused considerable damage to camphor trees in this locality.

CATALPA

CATALPA SPHINX (Ceratomia catalpae Boisd.)

entucky H. Garman (August 23): The catalpa sphinx is giving us more trouble than usual by stripping the leaves from the trees in our parks and about premises. We have had numerous complaints of injury this season.

ndiana C. R. Cleveland (August 19): The catalpa sphinx continues to be the subject of many reports.

FOUR-HORNED SPHINX (Ceratomia amyntor Hübner)

hio E. W. Mendenhall (July 30): The four-horned sphinx is very bad in Licking County, Ohio. Advise spraying with lead arsenate. (August 7): In Montgomery County the four-horned sphinx is very bad on catalpa trees. Spraying with lead arsenate seems to check its work.

ELM

EUROPEAN-ELM SCALE (Gossyparia spuria Modeer)

hio E. W. Mendenhall (August 14): I found the European elm scale on elm trees in nurseries near Sidney, Shelby County.

ndiana C. R. Cleveland (August 19): The European elm scale has been reported from Indianapolis, where severe injury was observed.

ELM COCKSCOMB GALL (Colopha ulmicola Fitch)

outh Dakota H. C. Severin (July 30): Unusually abundant on elm and appearing general throughout the State.

WOOLLY ELM APHID (Eriosoma americanum Riley)

outh Dakota H. C. Severin (July 30): Exceptionally abundant this year, and appearing general throughout this State.

ELM LEAF-BEETLE (Galerucella xanthomelaena Schr.)

onnecticut Geo. M. Coddling (August 20): In sections throughout Fairfield County, Conn. the elm leaf beetle is defoliating many of the elms. This pest is worse than it has been for several years.

W. E. Britton (August 23): Abundant at Greenwich, Wilton, and New Haven, and causing damage locally in the southwestern portion of the State. Damage reported also from Guilford and Farmington. Work of beetle showed up much later than usual and many trees including some sprayed ones have brown leaves which are dropping.

New York

E. P. Felt (July 28): Elm leaf-beetles are generally present in small numbers in the Hudson Valley, though occasional groups of trees, particularly English elms, are seriously injured. This latter may be associated with unusually favorable food, such as European elms or exceptional near-by winter shelter, such as sheds and belfries.

C. R. Crosby and assistants. In Dutchess County on August 2 these insects were very destructive and practically all varieties of elms were skeletonized this year.

Geo. M. Coddington (August 20): In sections throughout Westchester County, the elm leaf beetle is defoliating many of the elms. This pest is worse than it has been for several years.

Michigan

R. H. Pettit (July 23): This insect was found at Monroe, Mich., on this date. C. J. Burton, county agricultural agent, has just brought in specimens and reports the partial defoliation of a goodly number of elms in the city of Monroe.

California

T. D. Urbahn (August 3): Upon investigating an attack of the elm leaf beetles on street trees in Fresno this species was for the first time recorded from this State. Trees were being defoliated on several blocks, and in about eighty blocks were signs of infestation. The elm is an important shade tree throughout the State and every effort will probably be made to keep the pest down. Three generations are expected in the long summer season.

LOCUST

LOCUST LEAF-MINER (*Chalopus dorsalis* Thunb.)

Kentucky

H. Garman (August 23): Probably our most noticeable insect injury at the present time is that due to the locust leaf miner. The black locust is a common tree in Kentucky, and everywhere in the eastern part of the State it is recognizable at a distance by its brown appearance, caused by the attacks of these insects.

MAPLE

GOUTY VEIN GALL (*Dasyneura communis* Felt.)

Kentucky

H. Garman (August 23): Sugar maples are suffering from injury by a small gnat whose galls, consisting of elongated swellings on the veins of the leaves, are due to the species described by Felt as *Dasyneura communis*.

COTTONY MAPLE SCALE (*Trivizoria vitis* L.)

Indiana

C. R. Cleveland (August 19): The cottony maple scale is killing soft maples at Frankfort. It has also attracted unusual attention at Fowler.

RED SPIDER (Tetranychus sp.)

Kentucky H. Garmen (August 23): Sugar maples are suffering from the attacks of red spider, a pest that attacks low-growing plants like phlox.

OAK

OAK LECANIUM (Lecanium quercifex Fitch)

Georgia J. D. More: Reported from Montezuma on July 3, and from Farmington on June 26, attacking oak.

APPLE-TREE PRUNER (Hypermallus villosus Fab.)

New York C. R. Crosby and assistants: Reported by H. B. Davis on August 2 from Suffolk County, with statement that a rather heavy infestation was found.

PINE

COTTONY PINE SCALE (Pseudophilippia quantancii Oehl.)

Georgia John D. More (July 11): S. B. Adair reported that this insect was attacking pine at Mt. Berry on this date.

COWL MOTH (species undetermined)

Germany A. E. Boadle, Acting Chief, Lumber Division, Bureau of Foreign and Domestic Commerce, Department of Commerce. (American Trade Commissioner Douglas F. Miller, Berlin, July 24, 1924). The present summer has been the occasion of extensive ravages throughout the forests of eastern Germany by a small night-flying moth called the "owl moth" in Germany. This insect extracts the sap from pine needles and in a short time caused the death of the entire tree. It is estimated that during the present year 8 to 10 million solid cubic meters of lumber, particularly pine and fir, will have to be cut and placed on the market.

Large forest areas in Brandenburg, Pomerania, West Prussia and Silesia are being devastated by these insects and the entire forests are turning brown and shrivelled. It seems that the only method of combating the pest is the cutting down of trees in the infested areas. Further information concerning the effects of this forest pest will be forwarded as it comes to hand.

SPRUCE

SPRUCE GALL APHID (Chermes abietis L.)

Rhode Island A. E. Stone (August 22): Spruce chermes have been reported as doing considerable damage in a few plantations in the northern part of the State.

New York

C. R. Crosby (July 17): At West Falls this insect was attacking spruce; twigs bearing galls were received.

PINE-LEAF SCALE (Chionaspis pinifoliae Fitch)

Utah

George F. Knowlton (August 9): The pine leaf scale is present throughout the State, and doing considerable damage to ornamental Colorado blue spruce trees at Fountain.

RED SPIDER (Tetranychus spp.)

Ohio

E. W. Mendenhall (August 18): The red spiders are quite bad this summer in southern and western Ohio on evergreen in nurseries and private plantings. Dry sulphur seems effective.

Missouri

L. Haseman: Considerable damage to ornamental trees has been reported both in nurseries and in parks in Kansas City. More than usual in abundance as compared with an average year.

WALNUT

YELLOW-NECKED CATERPILLAR (Datana ministra Drury)

Ohio

E. W. Mendenhall (August 18): The larvae of the yellow-necked caterpillar are found quite generally in the State this year, and the damage done is somewhat extensive.

ALDER

INTERRUPTED COTTONWOOD LEAF-BEETLE (Linea lapponica L.)

North Carolina

R. A. St. George (June 1): Nearly all alder bushes in fields and woodsides surrounding local ity heavily attacked by larvae; many pupating. Many bushes entirely defoliated or partly so, at Biltmore.

HACKBERRY

HACKBERRY BUD-GALL (Pachypsylla celtidis-gemma Riley)

Nebraska

M. H. Swenk (July 10-August 1): A rather unusual number of complaints have been received this summer from some of our western counties of heavy infestations of hackberry leaves with the hackberry nipple gall, produced by Pachypsylla celtidis-gemma.

GLAUCY SCALE (Chrysomphalus tenebriogus Comst.)

Georgia

John D. More: Reported from Savannah by V. C. Durham on July 17 as attacking hackberry.

CHESTNUT

A BEETLE (Macroductylus angustatus Beauv.)

Georgia John D. More: Reported from Atlanta on this date as attacking chestnut, causing severe damage to foliage.

GUM

WALNUT SCALE (Aspidiotus juglans-regiae Comst.)

Georgia Jeff Chaffin (July 11): Reported from Savannah as attacking gum on this date.

SUGAR PERRY

LATANIA SCALE (Aspidiotus lataniae Sign.)

Georgia John D. More: Reported from Savannah by V. C. Durham on July 17 as attacking sugar berry on this date. Severe infestation.

IRONWOOD

BARNACLE SCALE (Ceroplastes cirripediformis Comst.)

Georgia John D. More (July 17): V. C. Durham reports this insect attacking ironwood at Savannah on this date.

INSECTS ATTACKING GREENHOUSE
AND ORNAMENTAL PLANTS

COLUMBINE

COLUMBINE BORER (Parainema purpurifascia G. & R.)

New Hampshire P. R. Lowry (July 10): Killed practically all columbines in a garden at Walpole.

DAHLIA

TWELVE-SPOTTED CUCUMBER-BEETLE (Diabrotica 12-maculata Fab.)

Georgia J. D. More (June 15): Reported from Concord as attacking dahlias etc. on this date.

SUNFLOWER WEEVIL (Rhodobaenus tredecimpunctatus Ill.)

Kansas J. W. McColloch (August 20): Grubs thought to be this species are abundant in the stems of dahlias in a nursery at Holton.

STALK BORER (Parainema nebris nitela Guen.)

Ohio E. W. Mendenhall (August 18): Sweet corn, peonies, and golden glow infested quite extensively about Columbus. I find the stalk-borer quite prevalent in many sections of the State this year.

DELPHINIUMS

ASH-GRAY BLISTER BEETLE (Macrobasis unicolor Kby.)

New Hampshire P. R. Lowry (July 10): Reported attacking potatoes and delphiniums at West Alton and Whitefield.

KUDZU VINE

GREEDY SCALE (Aspidiotus camelliae Sign.)

Georgia John D. More (July 17): Reported by V. C. Durham on this date attacking kudzu vine.

LILAC

A BLISTER-BEETLE (Pemphopoea sp.)

North Dakota C. N. Ainslie (August 20): This species appeared numerous and destructive to lilac bushes, feeding on the leaves stripping the bushes at Dickinson.

OYSTER SHELL SCALE (Lepidosaphes ulmi L.)

liana C. R. Cleveland (August 19): Frequent reports of severe injury to lilacs in Lafayette are being received. It has also been reported on maple and walnut.

MAGNOLIA

TULIP SCALE (Toumeyella liriiodendri Gmel.)

orgia Jeff Chaffin (July 11): Reported from Savannah to be attacking magnolia.

ORCHID

IVY SCALE (Aspidiotus hederæ Vallot)

orgia John D. More (June 26): Reported by V. C. Durham to be attacking orchid.

PALM

FLORIDA RED SCALE (Chrysomphalus aonidum L.)

orgia John D. More (June 26): Reported by V. C. Durham to be attacking palm.

PHLOX

RED SPIDER (Tetranychus sp.)

liana C. R. Cleveland (August 19): Red spider continues to be unusually abundant on the leaves of phlox, other ornamental plants and shade trees.

PRIVET

WHITE GRUBS (Phyllophaga sp.)

o E. W. Mendenhall (August 16): Large per cent of privet stock in the nurseries in the southwestern part of Ohio have been killed by white grubs this summer.

WEST INDIAN PEACH SCALE (Aulacaspis pentagona Targ.)

orgia John D. More (July 11): Reported from Savannah to be attacking privet.

CHERRY SCALE (Aspidiotus forbesi Johnson)

orgia John D. More (July 17): V. C. Durham reported this insect to be attacking Amoor River privet.

SPIREAE

SPIREAE LEAF-TYER (Argyroglote hemidesma Zell.)

o E. W. Mendenhall (August 16): This insect did considerable

damage to the spirea stock in nurseries near Urbana, Ohio. It can be controlled successfully by spraying with lead arsenate.

INSECTS AFFECTING MAN AND DOMESTIC

ANIMALS

MAN

CHIGGERS (Trombicula tlalzahuatl Murray),

Texas

D. C. Parman (July 26): The red bug, or chigger, has been quite noticeable in the canyon country during the month. It has caused considerable loss in young turkeys and chickens, and has been quite annoying to man. The damage has been less in the lower country.

STRAW-ITCH MITE (Pediculoides ventricosus Newp.)

Maryland

Perez Simmons (August 25): The U. S. Entomological Laboratory at Woodside became so seriously infested by these mites that several of the men were badly affected.

CATTLE

A HORSEFLY (Tabanus rubescens Bellardi)

Texas

D. C. Parman (July 25): The canyon horse fly has diminished during the month until it is rarely observed at present. There is very little oviposition on the stones in the rivers at Uvalde (August 21): The canyon horse fly has rarely been observed during the month either in the canyons or to the South; never more than a single specimen observed on stock. Egg masses are very few; the egg parasite is always present, and a good percentage of the eggs are parasitized.

COMMON CATTLE-GRUB (Hypoderma lineatum Devill.)

Texas

O. G. Babcock (August 10): Appearing very early, fairly well developed on August 6, 8, and 9. The size of the waible indicates that they were present by the beginning of August.

HORN FLY (Haematobia irritans L.)

Indiana

C. R. Cleveland (August 19): Horn flies on cows have not been as numerous as in some seasons past.

Texas

D. C. Parman (July 25): The horn fly has practically disappeared from cattle during the month. It is rare to see more than 10 to 15 on any animal, and in the vicinity of Uvalde most animals have none.

O. G. Babcock (August 6): At Sonora, San Angelo, Orona, Sheffield, and Texas Experiment Station this pest is reported attacking cattle and sheep; from 50 to 200 flies per animal on cattle; few on sheep, especially short woolled.

D. C. Parman (August 21): The horn fly is very rarely observed at Uvalde except in the heads of the canyons or in heavy timbered country along the rivers; never more than 100 on any cattle.

STABLE FLY (Stomoxys calcitrans L.)

Indiana

C. R. Cleveland (August 19): On some farms the stable fly is proving troublesome to both horses and cattle. Experimental tests of various repellent sprays, conducted in nine northern Indiana herds, are producing some very interesting data on the value of such materials in protecting dairy cows from fly attack.

Texas

D. C. Parman (August 2): The dry hot weather at Uvalde has practically exterminated the stablefly at this place, but an occasional adult is observed in the canyons and in the farming territory to the east. In a few places where considerable oat straw has accumulated in protected places to which stock have access the flies are quite noticeable.

SCREWORM (Chrysomya macellaria Fab.)

Texas

D. C. Parman (July 25): Adults of the screwworm fly have diminished about 40 per cent in the trappings during the month and are about normal for the season or a little above. Cases of worms run about 5 per 1,000 in goats and sheep and 2 to 3 per 1,000 in cattle and horses. (August 21): The screwworm fly had diminished at Uvalde until it is very rarely found (less than 1 per 1,000). There has been no rain since June 30, and we are experiencing one of the longest periods of maximum temperatures since the station was established.

O. G. Babcock (August 4): At Sonora there has been no rain since early June and the soil and air are very dry; flies are therefore few in numbers.

POULTRY

POULTRY FEATHER MITE (Licophysus silvianus C. & F.)

Indiana

C. R. Cleveland (August 19): The feather mite has been reported

from an additional locality, Cedar Lake. Control measures were explained, and an earnest effort has been made to clean up the infestation, which now seems to be well under control.

LARGE HEN LOUSE (Mencpon biserialum Fæg.)

Texas

D. C. Parman (July 25): The body louse in most flocks have decreased markedly during the last month. At Uvalde this is probably accounted for by the fact that the weather has been very dry and hot and the hens have a better chance to dust. (August 21): The body louse of hen have noticeably decreased at Uvalde, and it is difficult to obtain material for experimental work.

SMALL BODY HEN LOUSE (Mencpon pallidum Nitzsch)

Texas

D. C. Parman (July 25): The shaft louse appears to hold its own better than the body louse and is generally quite abundant at Uvalde in most flocks, and heavy infestations are found on some individuals. (August 21): The shaft louse is present in normal numbers and is generally found in most flocks and on nearly all of the older fowls at Uvalde.

STACKTIGHT FLEAS (Echidnophaga gallinacea West.)

Texas

D. C. Parman (July 25): The hen flea is again making its appearance in noticeable numbers in a few flocks at Uvalde. In one instance a small loss (4 or 5) has occurred in a flock of about 800 hens and about 4 per cent of the flock is heavily infested; others have some fleas attached. (August 21): The hen flea has increased at Uvalde during the month, and in some flocks the infestation has become very heavy. Losses by death have been as high as 2 per cent or more, and several flocks are in very bad condition.

FOWL TICK (Argas miniatus Koch)

Texas

D. C. Parman (August 21): The fowl tick has at least held its own at Uvalde and is probably more than normal in numbers. It is generally present except where strict remedial measures are used. It has probably contributed to the loss by death in some flocks.

CHICKEN HEAD LOUSE (Lipentrus heterographus Nitzsch)

Texas

D. C. Parman (August 21): The head louse is present in normal numbers and has caused more losses in the summer-hatched chickens at Uvalde.

CHICKEN MITE (Dermanyssus gallinae Redi)

diana C. R. Cleveland (August 19): Poultry mites have been the subject of several reports.

was D. C. Parman (August 21): The only infestation of the chicken mite found during the year at Uvalde was observed on July 8. Apparently the infestation had been very heavy, but the louse had been scalded out with boiling water, and kerosene has been used in some places. Only a moderate number of mites were found.

INSECTS INFESTING HOUSES AND
PREMISES

ARGENTINE ANT (Iridomyrmex humilis Mayr.)

Mississippi M. R. Smith (July 29): An infestation of Argentine ants was recently found at Piquis, Miss. by R. C. Price, the writer and B. F. Collins. The infestation was found to cover approximately 7 blocks. It has been brought to the writer's attention by two close observers living at Laurel and Columbia that the abundance or scarcity of the English sparrow is a very accurate index to the abundance or scarcity of the Argentine ant. According to the observers, when the ants are abundant they attack the young sparrows first as they are hatching or else get on the sparrows and cause them to fall from the nest; the English sparrow thus furnishes an index to the Argentine ant situation. (August 15): Florence, Miss., was recently found by the writer to be infested with Argentine ants. The infestation covers practically the entire town and appears to be at least 12 or 15 years old. (August 18): The writer has recently learned of the presence of the Argentine ant at Bolzoni. This makes an additional infestation record at Mississippi. Because of the prolonged drought we are having in the central and southern part of the State, the Argentine ant is giving much less trouble to the housekeepers than last year.

FIRE ANT (Solenopsis geminata Fab.)

Mississippi M. R. Smith (August 16): A lady living at Bentonina told the writer that the fire ant has damaged a great number of her clothes by eating small holes in them. She stated that the ants seem to attack the spots where grease or foods had been spilled. Her description of the ant and its work is such that one can hardly doubt the veracity of the reports.

LARGE BLACK CARPENTER ANT (Camponotus herculeanus pennsylvanicus DeGeer)

Mississippi M. R. Smith (August 16): The large black carpenter ant is present in a large number of the maple trees along the sidewalk here. The ants are throwing out large untidy masses of woolly debris and frass and seem to be honeycombing the more decayed portions of the trees.

LITTLE BLACK ANT (Monomorium minimum Buck.)

Mississippi M. R. Smith (August 16): The tiny black ant is a very common pest in a number of the houses and stores at Bentonla.

POWDER POST BEETLES (Lyctus spp.)

Indiana C. R. Cleveland (August 19): Injury to flooring by these beetles was reported from one point early in August.

FLEAS (Siphonaptera)

Indiana C. R. Cleveland (August 19): Fleas have proven extremely troublesome in the past month at various points.

WHEEL BUG (Arilus cristatus L.)

Kansas H. W. McCulloch (August 18): This insect was very abundant in Kansas last year. The first report this year is from Bucklin, where specimens were taken on garden beans.

EUROPEAN EARWIG (Torricula auricularia L.)

Rhode A. E. Stene (August 22): The European earwig, of which Newport Island has one of the three known colonies in the United States, has been quite abundant in that section during the past season and indications are that it is spreading, although very slowly.

NOTES FROM THE FEDERAL HORTICULTURAL BOARD, SEPTEMBER 1, 1924.

INTERCEPTIONS

4. Conotrachelus aguacatae Barber was taken from soil around avocados from Mexico at Laredo, Texas, by Mr. A. A. Stalmach, April 9, 1924. This weevil was collected by Dr. W. M. Mann at Huascata, Jalisco, Mexico, in . According to him this is a very serious pest, - so serious that the avocado trees from which Dr. Mann took the types of this species had been chopped down when he visited the place a few months later.
5. Oranges with brown spots from Argentina were taken from ship's stores at New York City, July 25, 1924, by Mr. Ivan Shiller. Upon receipt in Washington, they were examined by Mr. J. A. Stevenson, pathologist, who reports that the oranges were infected with Argentina scab, apparently a type of scab not present in the United States.
6. In February of this year, Mr. John T. Rogers, Inspector in charge at Charleston, South Carolina, forwarded to Washington several small green frogs, taken from near Cooper River, Charleston, South Carolina. Other specimens of these frogs were sent in by Mr. Rogers under date of June 21, 1924. They were referred to the Smithsonian Institution of the National Museum and we are advised that they represent adults and young of the very rare species, Hyla andersonii, and that the National Museum has had, previous to these sendings, only two specimens of this animal although unavailing search had been made for it on many occasions. Mr. Rogers was congratulated upon this important interception.
7. A moth, just identified as Farias fabia, Stoll, was taken from cotton bolls from India at the Inspection House, Washington, D. C., May 13, 1924, by Mr. H. L. Sanford. This insect has become a cotton pest in India. If it were established in the United States, it might prove as serious a pest as the pink bollworm.
8. A larva of the West Indian sugar-cane root borer, Diaprepes abbreviatus, which does not occur in this country, was intercepted at San Francisco November 24, 1923, by Messrs. Chatterley and Fields in roots of Courantia sp. The beetle emerged July 17, 1924. While this insect could only exist in tropical United States, it should be carefully guarded against as it is capable of causing serious injury to fruits, vegetables and other plants.
9. An earwig, (Anisolabis annulipes) was taken on Inlames from the Azores at Providence, R. I. July 8, 1924, by Mr. E. I. Smith. This insect is a serious pest in the Azores. It has not yet been introduced into the United States.



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OUTSTANDING ENTOMOLOGICAL FEATURES IN THE UNITED STATES FOR SEPTEMBER, 1924

White grubs have been reported as being more seriously prevalent than usual in the Ohio River Valley, southern Michigan, and parts of Nebraska and Kansas.

The Hessian fly promises to be seriously abundant in Ohio, where present indications are that the brood will be late in emerging. Rather heavy infestation is also reported from Illinois, Nebraska, and Kansas.

The European corn borer is reported as spreading southward much more rapidly than last year in Ohio, and the intensity of infestation has also materially increased.

Cool, rainy weather in Kansas and Illinois is believed to be very adversely affecting the chinch bug and no serious damage during 1925 is anticipated in these states.

The western corn rootworm is reported as moderately abundant in Michigan and Iowa and seriously abundant in parts of Nebraska.

The red spider problem has reached such serious magnitude in California as to be the occasion of a large conference of agricultural advisers, growers, and others, directly and indirectly associated with the fruit industry of that State, to devise methods for control.

The Mexican bean beetle is now reported in the northeasternmost corner of the State of Ohio, thence westward along the lake shore to Lorain County, thence southwestward through Hancock County and Shelby County to Butler County in the southwestern corner of the State. The infestation in West Virginia is now known to extend as far east as Harrison, Gilmer, Kanawha, Fayette and Monroe Counties, and in North Carolina eastward to Wilkes and Iredell Counties and has extended northward in Pennsylvania to Beaver County. In Wyoming the pest is extending northward in Platte County.

The pea aphid, on the whole, was not seriously abundant in Wisconsin this year, though a slight amount of damage early in August was reported from the dried-bea section in Door County.

The cotton boll weevil on the whole has not been a serious factor this year except in a few restricted regions. About the middle of the month, however, many bolls were found infested in parts of North Carolina and South Carolina which had previously been considered safe, in many cases the damage being on well-developed bolls. Similar injury to well-grown bolls was reported from Georgia. Considerable cotton in the Greenville district of Mississippi, the growth of which was retarded by dry weather, is now threatened by a late attack of the weevil.

The cotton leafworm is now reported as generally prevalent throughout the cotton belt. A slight amount of control work is being attempted in a few of the States but generally it is believed that the cotton is so far advanced that the leafworm can do but little damage.

A very heavy emergence of the cicada Tibicen resonans Walker is reported from the Tampa region of Florida, the outbreak being in intensity very similar to an emergence of the periodical cicada.

The bagworm is abundant and destructive over the greater part of Ohio, southern Indiana, and parts of Kentucky, Oklahoma, Kansas, and Mississippi.

Practically all the locust trees in southern Ohio are browned by the locust hispa.

OUTSTANDING ENTOMOLOGICAL FEATURES IN CANADA FOR SEPTEMBER, 1924

The eye-spotted bud-moth, Spilonota ocellana D. & S., occurred in outbreak form in Kings County, Nova Scotia, and was abundant and destructive in unsprayed orchards in southwestern Ontario.

The lesser apple worm, Laspeyresia prunivora Walsh, proved very injurious in the Okanagan Valley, British Columbia, this season.

Leafhoppers, principally the six-spotted species, Cicadula sexnotata Fallén have caused very severe injury to oats and barley over considerable areas in north central Saskatchewan.

The rosy aphid, Anuraphis roseus Baker, has been unusually abundant and destructive in the Annapolis Valley, Nova Scotia.

The grape-berry moth, Polychrosis viteana Clemens, has come into prominence as a grape pest in the Niagara district of Ontario.

The current fruit-fly, Epochra canadensis Loew, is so injurious in southern interior British Columbia as to make it impossible to grow currants and gooseberries commercially.

The peach worm, Anarsia lineatella Zeller, is abundant in the lower Okanagan Valley, B. C., causing considerable loss to peaches and prunes.

The wheat-stem sawfly, Cephus cinctus Norton, is not as plentiful in Manitoba this season as it has been during the last few years.

The infestation by the cabbage aphid, Brevicoryne (Aphis) brassicae L., in the Okanagan Valley, B. C., has been general, causing considerable loss.

The onion maggot, Hylemyia antiqua Meigen, has been unusually plentiful in the Okanagan Valley, B. C., this season, and the onion thrips, Thrips tabaci Lind. caused considerable loss.

The larch sawfly, Lygaeonematus erichsoni Hartig, is more or less generally pestering the forests over the whole southeastern corner of Nova Scotia, and it is reported on the increase in Manitoba.

A rather serious infestation of the gipsy moth, Porthetria dispar L., was discovered on the Belle Valley road, some 3 or 4 miles southwest of Lacolle Village, St. John's county, Quebec, on September 3. This outbreak, which covers an area of at least 600 square yards, is principally confined to apple and shade trees. In addition twelve infertile eggs, the remnants of an egg-mass, were found near the village of Beebe, in Stanstead county, Quebec, on July 29. This latter infestation constitutes the first record of the gipsy moth in Canada.

The European corn borer, Pyrausta nubilalis Hbn., has increased in intensity throughout its entire range (Ontario) to a most alarming degree. This increase is most striking in the western and lake-shore counties of Elgin, Kent, and Essex. In the lake-shore townships of Essex and Kent the average field infestation over a distance of 30 miles has increased from less than 1 per cent to 95 per cent. Elsewhere the increase has not been as marked. The northern, central, and eastern counties, though more severely infested than in 1923, have not attained a tenth of the increase found in the western lake-shore area.

GENERAL ENTOMOLOGY

DRAGONFLIES (Odonata)

Mississippi K. L. Cockerham (August 25): During the last few days there has occurred the largest flight of dragonflies in this section (Biloxi) which I have ever witnessed anywhere. All along the beach front literally hundreds of specimens would be in the air, heading and hanging into the face of the breeze. On one late afternoon I noticed a great many resting on the telephone and light wires around a residence; as many as one per foot would be about the average around this place where there was perhaps two hundred feet of this wiring. This unusual flight was during the most unusual period of heat experienced in this section in many years.

CEREAL AND FORAGE - CROP INSECTS

GENERAL FEEDERS

GRASSHOPPERS (Acridiidae)

Indiana J. J. Davis (September 22): Grasshoppers have increased noticeably this season. Reports of injury to field crops in the southwestern part of the State. Most inquiries have come from residents of cities in central and northern Indiana who report considerable damage to shrubbery and most all flower and vegetable garden crops.

Nebraska

M. H. Swenk (September 3): Grasshoppers (Melanoplus spp.) appeared in destructive abundance in Cheyenne and Kimball Counties during the month of August. The Cheyenne County agent reports that poisoning methods were successfully used against them. Complaints were also received of injury to alfalfa in Franklin County, but over the whole the summer of 1924 was unusually free from grasshopper troubles in this State.

Kansas

J. W. McColloch (September 20): The lesser migratory grasshopper (Melanoplus atlantis) continues to cause serious damage to alfalfa throughout the State. During the last month its injury has been particularly noticed on fall-sown alfalfa.

CUTWORMS (Noctuidae)

Illinois

W. P. Flint (September): Adult armyworms and cutworms have been less abundant in eastern Illinois during August and early September than at any time during the last four years, judging by the number taken in moth traps which have been run during the summer months for that length of time.

WHITE GRUBS (Phyllophaga spp.)

Ohio

E. W. Mendenhall (September 11): Complaints have come from all over the State in regard to the damage done by the common white grubs or grubworms, which have done a great deal of damage to the different crops this year.

Indiana

J. J. Davis (September 22): There have been reports of injury in isolated localities throughout the State. Strawberries, corn, and grasses are the principal crops attacked.

Michigan

Eugenia McDaniel (August 25): The June bug is causing an immense amount of damage to the truck gardens in and about Holland. This area is mostly muck soil and given over to truck farming.

Nebraska

M. H. Swenk (September 3): White grubs continued to be the subject of complaints of injury to bluegrass lawns, strawberry patch and flower gardens during the first two weeks of August. In addition to the counties mentioned in my last report, reports of serious injury were received during August from Boone, Merrick, Fillmore, Buffalo, and Nuckolls Counties.

Kansas

J. W. McColloch (September 20): White grub injury to bluegrass lawns has been reported from Mankato, Hutchinson, and Manhattan.

WHEAT

HESSIAN FLY (Phytomyza destructor Say)

Ohio

H. A. Gossard (September 20): The Hessian fly is quite threatening in several counties of the State and our emergence records up to the present writing indicate that we will probably have a late emergence. Fall conditions are very favorable for a great increase of infestation in next year's crop.

Illinois W. P. Flint (September): Emergence of the fall brood of the Hessian fly occurred at about the usual date. In northern Illinois 60 to 75 per cent of the fly had emerged by September 12. In central Illinois emergence began about September 8-9. Eggs were present in small numbers by the 10th and in moderate numbers on the 17th. As stated in the last report, enough fly is present in all sections of the State to cause moderate to heavy infestation to volunteer and early-sown wheat.

Nebraska M. H. Swenk (September 8): Two Hessian fly observation stations have been located in this State, one in Saunders County and the other in Gage County. The main emergence began at both stations September 3. The counts at the two stations for the period August 31 to September 25, are as follows:

Station No. 1 (Wahoo)				Station No. 2 (Beatrice)			
Percent emerged puparia : on 100 stubble plants		No. of eggs on : 100 wheat plants		Percent emerged puparia : on 100 stubble plants		No. of eggs on : 100 wheat plants	
Aug. 31	0	:	0	Aug. 31	0	:	0
Sept. 1	rain	:	0	Sept. 1	0	:	0
2	6.4	:	0	2	0	:	0
3	17.3	:	0	3	2.9	:	0
4	17.4	:	0	4	3.1	:	0
5	26.2	:	0	5	5.3	:	0
6	26.3	:	0	6	4.7	:	0
7	29.4	:	23	7	8.7	:	0
8	36.6	:	46	8	8.8	:	0
9	42.3	:	18	9	11.4	:	0
10	46.9	:	17	10	15.2	:	0
11	49.7	:	rain	11	16.2	:	0
12	52.7	:	0	12	17.1	:	0
13	51.1	:	20	13	20.6	:	0
14	57.6	:	3	14	24.6	:	0
15	58.1	:	285	15	25.6	:	0
16	52.6	:	80	16	27.9	:	0
17	59.1	:	44	17	26.3	:	0
18	71.8	:	721	18	29.0	:	0
19	72.7	:	485	19	33.3	:	0
20	72.4	:	808	20	21.4	:	0
21	75.4	:	622	21	30.5	:	0
22	78.5	:	336	22	34.7	:	100
23	81.6	:	839	23	25.0	:	20
24	85.7	:	210	24	35.8	:	20
25	88.1	:	736	25	38.7	:	10

Iowa M. H. Swenk (September 12): Indications now are that the fly-free date (or date of safe sowing) will come later this year than it did last year. The percentage emergence at the three field stations was reported as follows:

Harrison County		Henry County		Mills County	
Sept. 9	21	Sept. 7	35	Sept. 8	20
12	26	11	45	10	22
17	36	16	55	16	30
24	50	24	65	24	42

Kansas

J. W. McColloch (September 20): Conditions have been very favorable for the Hessian fly. Plenty of rain in many sections of the State brought up a good stand of volunteer wheat. Fly emergence which started July 26 has continued and much of the volunteer grain is infested. "Flaxseeds" can now be found and emergence from the volunteer wheat can be expected in the near future.

GREATER WHEAT-STEM MAGGOT (Meromyza americana Fitch)

Kansas

J. W. McColloch (September 20): Volunteer wheat sent in from Ellsworth was heavily infested with the maggots of this species.

GREAT-PLAINS FALSE WIREWORM (Eleodes opaca Say)

Kansas

J. W. McColloch (September 20): Two reports of injury have been received from the southwestern part of the State. A farmer at Plains has lost 300 acres of wheat seeded this fall. At Satanta, Haskell County, two fields show serious damage. There has been little rain in the southwestern part of the State this fall.

CORN

EUROPEAN CORN BORER (Pyrausta nubilalis Huebn.)

Ohio

H. A. Gossard (September 20): The European corn borer is spreading southward much more rapidly than in former years and intensity of infestation has increased greatly during the last year. Commercial damage in the infested districts is still less than 1 per cent, if we do not take into account the increased expense for harvesting and the embarrassments of the quarantine, but it is quite evident that the commercial damage will be very much greater in a year or two more.

CHINCH BUG (Blissus leucopterus Say)

Illinois

W. P. Flint (September): Continued rains during late August and September have made conditions very unfavorable for second-brood bugs, and have so reduced their numbers that there will be no danger of severe damage in any section of the State during 1925.

Kansas

J. W. McColloch (September 20): Chinch bugs are still abundant in the corn and sorghum fields but are not causing serious damage. Cool, rainy weather throughout much of the State has been favorable to crops and has had a tendency to reduce the chinch bug infestation.

CORN EARWORM (Heliothis obsoleta Fab.)

Illinois

W. P. Flint (September): According to J. H. Bigger, the corn earworm is not as abundant as usual in Illinois this season. Counts made in western Illinois during the last week show only about 7 per cent infestation.

tah

Geo. F. Knowlton (September 5): The corn earworm is not doing quite as much damage as last year or the year before.

regon

L. P. Rockwood (September 3): Damage to sweet corn is much more common than usual, especially as compared with last year when damage was unusual. Spring and summer have been unusually dry.

LESSER CORN STALK-BORER (Elasmopalpus lignosellus Zell.)

issippi

R. W. Harned (September 18): There has been a rather serious outbreak of the lesser corn stalk-borer, Elasmopalpus lignosellus. Apparently this insect is present in all parts of the State. We have received specimens from several dozen places, indicating that the insects are distributed in injurious numbers quite generally throughout the State. They have been reported as injuring especially soybeans, cowpeas, sorghum, corn, and sugar cane. In some gardens a large proportion of the plants were destroyed by these insects. One correspondent at Booneville who sent in specimens from his garden wrote that at least 90 per cent of the peas were infested, and 25 per cent of the beans. The outbreak of this insect this summer is rather interesting as we did not have a single report of injury by this species during 1922 or 1923. Three years ago, that is, during the summer of 1921, this insect occurred in injurious numbers at many places throughout the State. We do not have any record of the appearance of this insect during 1919 or 1920.

STALK-BORER (Papaipema nitela Guen.)

io

H. A. Gossard (September 20): The common stalk-borer has been received from many localities and was possibly somewhat worse than in ordinary seasons, but the large number of specimens sent in may have been due to the alertness of our people in looking for the European corn borer.

braska

M. H. Swenk (September 3): A few reports of injury by the stalk-borer to corn were received during the first week in August.

ARMYWORM (Cirphis unibunctata Haw.)

orgia

V. C. Durham (September 17): Reported from Marietta on this date damaging late corn.

WESTERN CORN ROOTWORM (Diabrotica longicornis Say)

ichigan

R. H. Pettit (September 9): Destruction of a field of corn by this insect near Dundee. It seems that the owner of this field had used corn three years in succession in order to try to kill out quack grass with the result stated. Ordinarily we have very little trouble with this insect, owing, I suppose, to the regular system of rotation which is maintained as general practice in our State.

Iowa C. N. Ainslie (September 15): The adults of this beetle are found in numbers. Possibly the late maturing of the corn, affording an extraordinary amount of late green silk, has been one factor in the abundance. They are feeding on helianthus and other flowers, also on alfalfa, and are in evidence everywhere. For a number of years the damage to corn has been negligible, very few fields of leaning or prostrate corn being observed.

Nebraska M. H. Swenk (September 3): Cases of serious damage in large corn fields by the western corn rootworm were reported from Cuming and Douglas Counties during August.

Connecticut W. E. Britton (September 15): Apparently not heretofore recorded from Connecticut; attacking flowers of aster and calendula at Gran

SOUTHERN CORN ROOTWORM (Diabrotica duodecimpunctata Fab.)

Nebraska M. H. Swenk (September 3): A Platte County field that had been in oats and sweet clover last year, and was planted to corn May 18-20 last, was heavily damaged during late July and early August by the southern corn rootworm, a pest that is not frequently seriously injurious in this State.

ALFALFA

LEAFHOPPERS (Jassidae)

Utah Geo. F. Knowlton (September 5): Leafhoppers of many species are numerous on alfalfa this year. Three species of leafhoppers are very numerous on alfalfa, apple, and peach in Boxelder and Cache Counties. Often 20 or more can be swept into a net at a single stroke.

GARDEN WEBWORM (Loxostege similalis Guen.)

Illinois W. P. Flint (September): The garden webworm has appeared in abundance in some August fields of alfalfa in east-central Illinois. It has been necessary to spray or dust some of these fields in order to prevent complete destruction by this webworm.

PEA APHID (Illinoia pisi Kalt.)

Utah Geo. F. Knowlton (September 5): Numerous on alfalfa now, doing some damage.

FALL ARMYWORM (Laphygma frugiperda S. & A.)

Mississippi M. M. High (September 25): This insect was very abundant late in July and early in August on a number of crops including collards, corn, grasses, etc.

CLOVER

CLOVER-LEAF WEEVIL (Hyocera punctata Fab.)

Geo. F. Knowlton (September 5): The clover-leaf weevil is present in the State but doing little damage this year.

CLOVER-SEED MIDGE (Dasyneura leguminicola Lint.)

M. H. Swenk (September 3): A large red-clover field in Polk County was found to be heavily attacked by the clover-seed midge so that the seed crop was spoiled, while a near-by field that had been cut 10 days earlier was not seriously injured.

SOYBEANS

SOUTHERN CORN ROOTWORM (Diabrotica duodecimpunctata Fab.)

J. H. Bigger (August 23): Feeding on blossoms in such numbers as doubtless to be a factor in reducing yield of beans this season in Morgan County.

GRASS

COTTONY GRASS SCALE (Eriopeltis festucae Fonsc.)

W. P. Flint (September 20): During August several reports have come in, accompanied by specimens, of scale working on redtop in southeastern Illinois. This scale was identified by Dr. T. H. Frison as Eriopeltis festucae. To date, no serious amount of damage has been reported, although a noticeable amount of grass has been killed in some fields.

A CATERPILLAR (Mocis repanda Fab.)

Geo. N. Wolcott (September 3): Dr. A. E. Vinson, Chemist of the Service Technique, recently returned from a trip to Gonave Island and brought back with him specimens of caterpillars which he found abundant in various places in guinea grass. They proved to be Mocis repanda Fab. of which there was a serious outbreak last winter at many points in Porto Rico.

FRUIT INSECTS

GENERAL

RED SPIDERS (Tetranychus spp.)

California Weekly News Letter, State of California, Vol. 6, No. 19 (September 20): A conference on red spider control was held under the auspices of the California State Department of Agriculture during the past month. Approximately two hundred persons attended the conference.

APPLE

RED-HUMPED CATERPILLAR (Schizura concinna S. & A.)

Pennsylvania S. W. Frost (September): This late-feeding caterpillar, along with others, has been found numerous in some orchards.

APPLE AND THORN SKELETONIZER (Hemerophila pariana Clerck)

Massachusetts A. I. Bourne (September 26): The last brood of this insect was of very little importance. The spread throughout the southeastern section of the State has been more extensive than elsewhere, some orchards showing considerable injury.

APPLE LEAF-MINER (Tischeria malifoliella Clemens)

Ohio E. W. Mendenhall (August 29): Apple stock in the nurseries in southwestern Ohio is badly infested with the apple leaf-miner.

CODLING MOTH (Carpocapsa pomonella L.)

Massachusetts A. I. Bourne (September 26): Considerable side worm injury in Worcester and Middlesex Counties. Indications are that injury is due to late hatching first-brood caterpillars.

YELLOW-NECKED CATERPILLAR (Datana ministra Drury)

Pennsylvania S. W. Frost (September): This species appears even in orchards receiving four to five sprays.

GREEN APPLE APHID (Aphis pomi DeG.)

Utah Geo. F. Knowlton (September 5): Green apple aphids are still numerous in apple orchards in Boxelder, Lavis, and Cache Counties, but not damaging enough to spray.

APPLE LEAFHOPPER (Empoasca mali LeB.)

Pennsylvania S. W. Frost (September): This leafhopper has been noticeably abundant during the last two months.

ROSE LEAPHOPPER (Empoae rosae L.)

Pennsylvania S. W. Frost (September): Not as abundant in Adams County as last year, although certain orchards, especially the younger orchards, show considerable stippling on the leaves. Considerable spotting of the fruit by exudations has been noted but otherwise no serious injury.

APPLE-SEED CHALCID (Syntomaspis druparum Boh.)

Pennsylvania S. W. Frost (September): The apple-seed chalcid has been abundant for several years in Adams County, especially on certain varieties, as Grimes Golden. The injury is often confused with red-bug injury which it resembles superficially.

A FLOWER-BEETLE (Euphoria sepulchralis Fab.)

Kansas J. W. McColloch (September 22): Adults of this species are causing some damage to fruit in this vicinity. A hailstorm a week ago bruised quite a bit of fruit and rendered it attractive to these beetles.

EUROPEAN RED SPIDER (Paratetranychus pilosus C. & F.)

Massachusetts A. I. Bourne (September 26): Practically no bronzing of foliage has resulted from the attack of this species this year.

Pennsylvania S. W. Frost (September): Not as abundant as last year. An occasional orchard in Adams County shows an abundance of the mite but nowhere has serious injury been noted on the foliage.

PEAR

PLUM CURCULIO (Conotrachelus nemophar Hbst.)

Pennsylvania S. W. Frost (September): Quince and pears in home gardens and orchards suffer serious infestation by the plum curculio.

PEACH

ORIENTAL PEACH MOTH (Laspeyresia molesta Busck.)

Connecticut Philip Garman (September 25): Causing considerable loss in some peach orchards in New Haven and Fairfield Counties. Abundance as compared with an average year seems to be more abundant.

PEACH-TWIG MOTH (Anarsia lineatella Zell.)

Cal Geo. F. Knowlton (September 5): Peach-twigg borers have done considerable damage in orchards not sprayed for their control. Arsenical sprays used at the right times have been effective in lowering the damage to twigs and fruit.

REARHORSE (Stagmomantis carolina Johan.)

Georgia Oliver I. Snapp (September 15): The praying mantis is apparently unusually abundant in Georgia peach orchards this year at Fort Valley.

SAN JOSE SCALE (Aspidiotus perniciosus Comst.)

Georgia Oliver I. Snapp (September 15): The general San Jose scale infestation in the Georgia peach belt is lighter this season of year than usual. Unusually low temperatures last winter and careful spraying are probably the factors responsible for the reduction in the infestation. Judging from present indications a large quantity of both the heated and cold-pumped lubricating-oil emulsions will be used for scale control in Georgia this year.

WEST INDIAN PEACH SCALE (Aulacaspis pentagona Targ.)

Connecticut M. P. Zappe (September 10): This insect seems to be much more abundant this year than for several years past at Stamford; attacking catalpa, plum, apple, and cherry.

PEACH-TREE BORER (Aegeria exitiosa Say)

Georgia Oliver I. Snapp (September 15): Adults are now emerging in numbers. A majority of the growers will again use paradichlorobenzene this year. 500,000 pounds were used in the peach belt last year.

Utah Geo. F. Knowlton (September 5): Peach-tree borers are doing less damage than last year. Where treated with paradichlorobenzene, good controls resulted last fall. There has been less gum around the trees than for years.

SHOT-HOLE BORER (Scolytus rugulosus Ratz.)

Utah Geo. F. Knowlton (September 5): Shot-hole borers are apparent in most old or neglected peach and cherry orchards in northern Utah.

PLUM CURCULIO (Conotrachelus neruphar Hbst.)

Massachusetts A. I. Bourne (September 26): Experimental plantings show that one or two applications of spray subsequent to calyx spray was effective in controlling this pest.

Georgia Oliver I. Snapp (September 15): Second-generation adults have been emerging from the soil in limited numbers during the last two weeks. Jarring records show that the peak of appearance of second generation adults in the orchards was reached September 4.

CHERRY

CHERRY APHID (Myzus cerasi Fab.)

Utah Geo. F. Knowlton (September 5): The black cherry aphid has been present doing some damage in every cherry orchard examined, but seldom doing excessive damage.

GRAPE

GRAPE LEAFHOPPER (Erythroneura comes Say)

Mississippi M. M. High (September): The grape leafhopper has been numerous on grapes about Gulfport.

PECAN AND WALNUT

FALL WEBWORM (Hyphantria cunea Drury)

Georgia Oliver I. Snapp (September 15): This insect is not as abundant as usual in this part of the State (Fort Valley).

PECAN NUT CASE-BEARER (Acrobasis hebescella Hulst)

Mississippi M. M. High (September): The pecan leaf case-bearer along with A. hebescella is plentiful in some orchards along the coast.

PECAN LEAF CASE-BEARER (Acrobasis nebulella Riley)

Mississippi M. M. High (September): The pecan-leaf case-bearer is plentiful in some orchards along the coast.

California Clifford T. Dadds (August 29): Introduced from Monticello, Fla., during the winter of 1923 on pecan trees. Reported in the Journal of Economic Entomology, Vol. XVII, No. 4, page 504, 1924.

EUROPEAN WALNUT APHID (Chromaphis juglandicola Kalt.)

Oregon Sadie E. Keen (September 5): Apparently the early shedding of leaves at Forest Grove is due to attack of these aphids which are present in great numbers and in all stages.

CITROUS AND SUBTROPICAL FRUITS

COMMON MEALYBUG (Pseudococcus citri Risso)

Louisiana H. K. Plank and assistants (September 13): Very abundant at New Orleans on doorway fig trees within the city limits, causing much discoloration of fruit due to sooty mold. Moderately to severely infested trees are almost completely defoliated and sending out a new set of leaves.

CITRUS WHITEFLY (Dialeurdes citri Ashm.)

Louisiana H. K. Plank (September 20): Very abundant at Waldheim on September 4, on some old satsuma orange trees near^a house which were killed back but little by the freeze of last January, when the temperature went to about 18°F., sufficient to cause many of the leaves to fall and no fruit to develop.

ORANGE SCALE (Chrysomphalus aurantii Mask.)

Texas H. K. Plank (August 18): Found abundant in groves at Harlingen not well sprayed. Generally distributed here and about Mission, and San Benito. Attacking Citrus grandis.

FLORIDA RED SCALE (Chrysomphalus aconidum L.)

Texas H. K. Plank (August 18): Very abundant and generally distributed at Harlingen and in the citrus groves to the west. Has been infesting the upper surface of banana leaves growing near infested trees, also attacking Citrus grandis, C. sinensis, and Musa sapientum.

SOFT BROWN SCALE (Coccus hesperidum L.)

Louisiana H. K. Plank and assistants (August 30): On some trees at Willswood that have been unsprayed since last year, this scale has increased to a very marked extent and is attended by large numbers of Argentine ants, but is not now very abundant. The freeze last January, when the temperature went to about 16°F., is very largely responsible for the great decrease since last year.

PURPLE SCALE (Lepidosaphes beckii Newm.)

Louisiana H. K. Plank and assistants (August 30): On some trees at Willswood that have been unsprayed since July of this year, this scale has increased very markedly, but still is comparatively scarce. The freeze last January, when the temperature went to about 16°F., is very largely responsible for the great decrease from last year.

TRUCK - CROP INSECTS

GENERAL FEEDERS

PAINTED LADY BUTTERFLY (Vanessa cardui L.)

Ohio H. A. Gossard (September 20): During June and July the thistle butterfly nearly cleaned up the Canada thistle in several Ohio counties, this development paralleling the conditions in States to the westward, as reported in the last two numbers of the Insect Pest Survey Bulletin.

SOUTHERN GREEN PLANT-BUG (Nezara viridula L.)

Florida F. S. Chamberlin (August 29): The southern green stink-bug is much less numerous than is usually the case at this season of the year. The numbers of this pest were greatly reduced by the unusually low temperatures last winter and apparently have not yet been brought up to normal.

FALL ARMYWORM (Larhyma frugiperda S. & A.)

rginia

Herbert Spencer (September 25): We have had considerable trouble in the trucking sections of Virginia during the weeks of September 8 and 15 with fall armyworms, but to date the amount of damage is noticeably less than in the similar outbreak last year. Corn has been ragged on a few farms, kale has grown too large to be seriously damaged, but spinach, which is just coming through the ground, is showing considerable injury. Bran bait is being used extensively, and with success except on the spinach. With this crop heavy dusting with arsenicals is giving better results.

CUTWORMS (Noctuidae)

rginia

Herbert Spencer (September 9): I wish to report at this time an outbreak of cutworms on kale, lettuce, and parsley. The stand in certain areas has been injured to such an extent that replanting will be necessary.

BLISTER-BEETLES (Meloidae)

braska

M. H. Swenk (September 3): Blister-beetles were the subject of several cases of complaint. The gray blister-beetle, Epicauta cinerea Forst., was reported injuring potatoes, tomatoes, beans, cucumbers, and other garden plants in Sherman and Furnas Counties; that species and E. lemniscata Fab. were reported as together injurious in Hitchcock County; and in Sioux County a case was reported where the blister-beetle Lytta geneipennis completely stripped the lilac bushes and injured the leaves of the ash trees.

ah

Geo. F. Knowlton (September 5): Blister-beetles are again numerous in a few fields west of Smithfield and in Farmington.

RED SPIDERS (Tetranychus spp.)

diana

J. J. Davis (September 22): Red spiders are very abundant throughout the State on flower and vegetable garden plants, as well as on trees and shrubbery, especially conifers.

ssissippi

M. M. High (August 25): A red spider, Tetranychus sp., has appeared unusually abundant on beans, eggplant, strawberry, pepper, melon, and roses in southern Mississippi during the last several weeks.

ah

Geo. F. Knowlton (September 5): Red spiders are damaging many crops throughout the State this year. Very heavy damage has been done to some raspberry patches and flower beds in Cache, Boxelder, and Davis Counties the last month.

PEPPER

PEPPER WEEVIL (Anthrenus eugenii Cana)

California

Roy E. Campbell (September): Less than one-half acre of bell peppers are being grown in the locality where they were so badly damaged by the pepper weevil last year. Many pods had set and some were mature, but practically all were infested, some with several insects. Larvae, pupae, and newly emerged adults were taken, indicating that one generation had been completed. Adults were captured easily by shaking the plants over a net.

POTATO AND TOMATO

POTATO APHID (Macrosiphum solanifolii Ashm.)

Utah

Geo. F. Knowlton (September 5): The potato aphid is doing little damage to potatoes this year.

POTATO LEAFHOPPER (Thymosca mali LeB.)

Utah

Geo. F. Knowlton (September 5): The potato leafhopper is not doing much damage to potatoes this year, but is present in small numbers in most fields.

TOMATOWORM (Protoparce sexta Johan.)

Utah

Geo. F. Knowlton (September 5): Tomatoworms are doing considerable damage in some patches, but usually not present in great numbers. Some were taken on apple trees in Cornish.

CABBAGE

CABBAGE APHID (Brevicoryne brassicae L.)

Connecticut

A. E. Wilkinson (September 25): Recent rains have materially lessened the number of this insect in this State; attacking cabbage, cauliflower, and brussels sprouts.

Utah

Geo. F. Knowlton (September 5): Cabbage aphids have been very numerous this summer and frequent dusting or spraying has been necessary in Cache County.

IMPORTED CABBAGE WEBWORM (Hellula undalis Fab.)

Mississippi

M. M. High (August 25): The imported cabbage webworm has done injury to late cabbage and turnip, although not as severe as during some former years.

CABBAGE LOOPER (Autoerapha brassicae Riley)

Mississippi

M. M. High (August 25): Autoerapha brassicae has done considerable injury to turnips, cabbage, and collards on the Mississippi coast the past few weeks.

- CABBAGEWORM (Pontia rapae L.)

Connecticut

A. E. Wilkinson (September 25): This insect is more abundant than usual in this State; attacking cabbage and cauliflower.

STRAWBERRY

STRAWBERRY LEAF-ROLLER (Ancylis comptana Froehl.)

Cal

Geo. F. Knowlton (September 5): The strawberry leaf-roller is widely distributed throughout the strawberry raising sections of the State, and has done considerable damage in Boxelder and Davis Counties this year.

BEANS

MEXICAN BEAN BEETLE (Epilachna corrupta Muls.)

Pennsylvania

Neale F. Howard (September 2): The Mexican bean beetle was reported from Washington and Green Counties during the latter half of August.

West Virginia

W. E. Runsey (September 3): Reported from Logan County as being destructive.

Neale F. Howard (September 2): Reported from Kanawha, Roane, Harrison, Calhoun, Gilmer, Doddridge, Wetzel, Marshall, and Tyler Counties during the latter half of August.

North Carolina

Neale F. Howard (September 2): Reported from Wilkes, Caldwell, Alexander, and Iredell Counties on August 27.

Ohio

D. M. DeLong (September): During the last week I have been scouting in northern Ohio and have found the beetle extending from Wheeling, along the Ohio River, to East Liverpool, then along the eastern border of Ohio to Geneva, in Ashtabula County, and along the lake westward through Lake County, around Cleveland, in Cuyahoga County, and in the eastern part of Lorain County. I have not been able to locate it west of this point although a detailed search was made. Furthermore, second-generation larvae were found along the lake and a slight amount of damage.

H. A. Gossard (September 20): The Mexican bean beetle is also now found in nearly all parts of the State, according to the reports of Mr. DeLong, of the Ohio State University, and Mr. Miller, of the Experiment Station located at Chillicothe.

Neale F. Howard (September 2): Reported from Delaware, Marion, Hardin, Shelby, Crawford, and Morrow Counties during the latter part of August.

Wyoming

C. I. Corbins (August 25): The writer found this insect at Wheatland, Platte County, early in August, 1923, though the county agent stated that he had seen it the previous year. So far it has attacked only garden beans, but has done severe damage to these. This year the insect has spread from Wheatland northward to the territory immediately southwest of Dwyer.

BEAN APHID (Aphis runcidis Linn.)

Utah

Geo. F. Knowlton (September 5): The bean aphid is numerous on many plants here, being especially numerous on truck crops and burdock the last two summers.

LEMA BEAN VINE-BORER (Monoptilota pergratialis Hulst)

Mississippi

R. W. Harned (September 18): The lima bean vine-borer has been received from two properties in Marshall County.

PEAS

PEA APHID (Illinoia pisi Kalt.)

Wisconsin

J. E. Dudley, jr.: During the first week in July infestation of the pea aphid in eastern and southern Wisconsin assumed such proportions that a large per cent of the crop was threatened; and growers and canners became much alarmed.

It was found in the Columbus region that the continued heavy rains brought about such a rapid spread of the fungus disease that aphids disappeared as by a miracle and the infestation was reduced to a point where it was of no consequence. This same condition of heavy rains followed by fungus was felt a few days later along the Lake Michigan shore until by the 15th it appeared that the threatened damage had been greatly alleviated, if not entirely prevented.

During the last half of the month no reports of severe aphid injury have come to the laboratory, and in view of the abundant moisture and generally good yields, it has been felt that the aphid has not caused much damage. Just recently, however, (August 6) reports of injury have come from northern Wisconsin and from Door County where there is a considerable dried-pea business.

Nebraska

M. H. Swenl: (September 3): Sweet peas were more or less injured in eastern Nebraska by the pea aphid.

GREEN CLOVER WORM (Plathypena scabra Fab.)

Virginia

Herbert Spencer (September 25): There have been several reports of green clover worm on fall English peas in Accomac and Northampton Counties (Eastern Shore). In the Norfolk section a few larvae of this insect are present, but no appreciable damage is being done.

CUCUMBERS

STRIPED CUCUMBER-BEETLE (Diabrotica vittata Fab.)

CORRECTION:
Michigan

R. H. Pettit (September 3): Report of July 22, page 186, of the Insect Pest Survey Bulletin Vol. 4, No. 5, August 1, 1924, should read "arsenate of calcium" and not "arsenate of soda."

PICKLEWORM (Diaphania nitidalis Cramer)

Illinois

S. C. Chandler (September): Twenty-five per cent infestation of cucumbers was noted in the south end of the State.

COTTON APHID (Aphis gossypii Glov.)

New York

P. J. Chapman (September 20): Specimens received from Binghamton. Large quantities of cucumbers have been ruined for the last three years.

MELONS

COTTON APHID (Aphis gossypii Glov.)

Indiana

J. J. Davis (September 22): Many reports of injury the past month have been received from central and southern Indiana.

Mississippi

M. M. High (August 25): The melon aphid has done severe injury to some late plantings of melons about Gulfport.

Nebraska

M. H. Swenk (September 3): Aside from the aster aphid and pea aphid the only aphid seriously complained of during the month of August was the melon aphid, and even of these the complaints were much fewer than usual. No doubt the dry summer was largely responsible for this small amount of aphid trouble.

BEETS

SUGAR-BEET WEBWORM (Loxostege sticticalis L.)

Utah

Geo. F. Knowlton (September 5): Beet webworms are less numerous in northern Utah this year and doing less damage than two years ago.

BEET LEAFHOPPER (Eutettix tenella Baker)

Utah

Geo. F. Knowlton (September 5): Leafhoppers on beets are less numerous now than earlier in the season. Often it is hard to find a single specimen in fields badly damaged with curly-leaf. Many fields are being plowed up, and others are neglected because of the damage from this disease. The Cornish sugar factory will not run this year, and probably others will not. Around Garland the crop of beets probably will be less than 7 tons per acre where there is a crop worth harvesting.

CELERY

BLACK SWALLOW-TAIL BUTTERFLY (Papilio polyxenes Fab.)

Connecticut

A. E. Wilkinson (September 22): This insect is reported attacking celery. There has been an increase in abundance as compared with

COTTONBOLL WEEVIL (Anthonomus grandis Boh.)

- North Carolina F. Parker (September 16): Many bolls that were considered safe are either found to be punctured by the weevil or shedding on account of excessive drought or rains. Weevils are said to be doing severe damage to grown bolls.
- Georgia O. I. Snapp (September 15): Infestation is lighter than usual in the locality of Fort Valley. Hot, dry weather is perhaps responsible.
- V. C. Childs (September 16): Weevils are now damaging bolls that are fully half-grown and in some instances were noticed where grown bolls contained one or more grubs. Damage is nothing like what might be expected from experience during the past few years.
- Mississippi Geo. A. Malongy (August 30): Immigration of weevils during the week of August 30 in c fields in the vicinity of Greenville threatened considerable damage to a large acreage of cotton, which had been retarded by dry weather until rains in early August promoted active growth and fruiting.
- R. W. Harned (September 18): The boll weevil is not even yet abundant enough to be serious in most of the cotton fields in this State that have come under our observation. There have been fewer boll weevils throughout the entire season than on similar dates during previous years. At present here and there fields can be found where the infestation is quite general but, as a whole, the boll weevil has not been an important factor in Mississippi this year.
- Louisiana W. E. Hinds (August 28): Small survival of hibernation, together with the steady continuance of exceptionally hot dry weather from June 1 to the present time, has not only controlled weevil multiplication but has also seriously cut the yield of cotton in most of the State. Little poisoning has been required. The crop of 1924 will, undoubtedly, be under 400,000 bales.
- Oklahoma A. N. Caudell (September 10): In Payne County I found the boll weevil to be a very scarce insect, some of the natives claiming there were none, but there were a few present in a field I saw. In the same region they were very numerous during the last few years.

COTTON LEAFWORM (Alabama argillacea Huebn.)

- North Carolina F. Sherman (September 18): To date I have not received a single complaint or report of damage by it. they
Two of our workers found two specimens in Moore County which

judged to be larvae of this species, but as they were not reared or preserved even that record is subject to "reservation".

Last year (1923) under the conditions then prevailing I did venture to predict an outbreak and am glad I did for it did occur. With the information from the "Survey", and my own accumulation of complaint records which now cover nearly 24 years, I am beginning to feel as if I can sometimes, and in some cases, draw inferences as to insect probabilities which are better than mere blind guesswork.

- Georgia B. M. Eddis (September 1): Said to be prevalent in the locality around Bahira, but too late to cause much damage.
- J. D. More (September 5): The cotton leafworm was abundant at Bahira on September 1.
- Illinois S. C. Chandler (September): There is some infestation, but generally not bad, in the southern end of the State.
- Tennessee R. B. Coad (September 3): Western Tennessee counties are reported as generally infested.
- Mississippi R. W. Harned (August 27): We received our first specimens of this pest from the State for 1924 yesterday. We received two larvae from Michigan City. This is next to the Tennessee line. Today we have received a telegram from Prof. J. W. Fox of Scott, which is as follows: "Cotton leafworm showed up here twenty-fifth." Throughout most of the State the cotton is so nearly mature that it will not pay to poison for this insect. There may be a few fields where the cotton is still fruiting where it will pay to poison.
- B. R. Coad (September 3): From Mississippi reports show all stages present in the following Counties: Benton, Washington, Bolivar. Dusting with calcium arsenate for control has been under way in the State for about a week. Considerable damage is probable from this insect in many localities.
- R. W. Harned (September 18): The cottonworm has now made its appearance here and there throughout the State. In most fields it has appeared in very small numbers but probably some fields are badly infested. In the northern part of the State where cotton is still fruiting some poisoning has been done to control this insect.
- Arkansas Geo. A. Maloney (September 5): The county agent in Mississippi County reports leafworm damaging to cotton crop. The prospects for a good crop are promising if leafworm infestation is controlled.
- Louisiana W. D. Hunter (August 26): During the last few days the cottonworm has been reported in this State from Shreveport and Tallulah.

W. M. Hinds (August 28): I have just received reports of the occurrence of the genuine Alabama argillacea at Arcadia, Bienville Parish, northern Louisiana, and Bunkie Alexandria, Rapides Parish, central Louisiana. These worms are now somewhat more than one-half grown and dust for their control is being applied. This is an addition to Mr. Hunter's Madison Parish report on August 25. (August 28): First of worms reported as seen about August 15 in Madison, Bienville, and Rapides Parishes by a county agent. Some poisoning is under way in northern Louisiana. Worms are up to full grown in the central part of the State. (September 5): Worms are scattering at Baton Rouge. No ragging yet seen or reported here. Worms are from one-half to fully grown. No poisoning is likely as picking is well advanced.

B. R. Coad (September 3): Dr. Hinds reports worms active in Bienville and Rapides Parishes. Madison Parish infestation is scattered but general. There is little doubt but that the infestation is general and spreading throughout this State, though generally scattered.

Geo. A. Maloney: Under date of September 15 Dr. W. E. Hinds writes: "Cottonworm moths from the second generation are just now emerging at Baton Rouge. Cotton is putting on considerable top growth and in some cases there is a small possibility of some top crop, because of boll weevil control through extreme heat and drought. I doubt, though, whether planters will dust this year for the cottonworm even to save a small top crop.

Louisiana and
Missouri

Geo. A. Maloney (September 6): Leafworm reported as of September 1 in the following Parishes of Louisiana: Bossier, Caddo, Bienville, Caliborne, Jackson, Natchitoches, and Vernon. Reported in Mississippi, Scott, and Pemiscott Counties, Missouri.

Missouri

Geo. A. Maloney (September 5): Specimens of full-grown larvae of this pest were received today from Marston, New Madrid County, with advices that they were numerous in cotton fields of that County.

Arkansas

B. R. Coad (September 3): Reports from this State indicate that all stages are present in the following Counties; Miller, Jefferson, Faulkner, White, Independence, Jackson, and Lawrence. Dusting with calcium arsenate for control has been under way in this State for the last ten days. Considerable damage is probable from this insect in many localities.

Dwight Isely (August 26): To date we have collected or received specimens of the cottonworm from the following Counties: Miller, Scott, Conway, Faulkner, Pulaski, Lincoln, Randolph, Lonoke, and Washington, indicating that the insect is well distributed over the State. In a few instances injury may occur to very late cotton.

R. W. Harned (August 25): I have today received some specimens of full-grown larvae and pupae of this insect from Lepanto, Poinsett County. I have not yet this year seen a specimen of this insect that was collected in Mississippi.

W. D. Hunter (August 26): During the last few days the cottonworm has been reported in this State from Newport, Tuckerman, Batesville, Searcy, Conway, and Pinebluff, the infestation being apparently much heavier than in Texas.

J. W. McColloch (September 2): Specimens of the larvae and pupae of the cottonworm were received from Chetopa with the information that they had caused considerable defoliation. (September 20): The larvae have practically defoliated a small experimental field of cotton on the experiment station farm at Manhattan.

W. D. Hunter (August 26): During the last few days the cottonworm has been reported in this State at Simonton, Columbus, Bastrop, Dallas, and Celina.

B. R. Coad (September 3): A general spread of this insect is reported by Dr. Hunter throughout this State.

Geo. N. Wolcott (September 3): There was an outbreak of Alabama caterpillars near Gonaives in July and they generally seem much more abundant than they were in Porto Rico.

COTTON APHID (Aphis gossypii Glov.)

R. W. Harned (September 18): Another interesting entomological feature of the summer of 1924 has been the unusual abundance of the cotton aphid throughout many counties in this State. Although we usually do not expect the plant-lice to be abundant during periods of hot, dry weather, these insects have been unusually abundant this year. Many farmers, with long years of experience, have informed me that they have never seen the plant-lice so numerous before, especially during the latter part of the summer after the cotton was mature, or nearly mature. Recently Mr. H. M. Harris, formerly of this State, but now of the Iowa State College, Ames, Iowa, spent about two weeks inspecting cotton fields in various parts of Mississippi. A part of his report was as follows: "In scouting a large part of the State for the cotton flea, Psyllus seriatus, the writer has had occasion to observe the presence of great numbers of lice on the foliage and in some cases even on the blossoms of the cotton. This would appear to be unusual, especially in view of the fact that the weather has been unfavorable for aphids, due to the extended drought and high temperatures. In all fields lady-beetles of several species have been found in numbers."

COTTON RED SPIDER (Tetranychus telarius L.)

R. W. Harned (September 19): More complaints have been received during the last two months in regard to red spider injury than during any of the last 17 summers. Most of these complaints

have been in regard to the damage that the red spider is causing to cotton. A large proportion of these complaints have come from the northwestern part of the State. Some complaints in regard to red spider injury have, however, been received from almost all sections of Mississippi. Most of the plants that we have received that were infested with red spiders have been cotton plants, but this is due to the importance of cotton as a crop. Among the other plants that have been received are privet, begonia, violet, dahlia, grape, lilac, bean, kudzu, hydrangea, and angel trumpet. Many other plants were probably injured.

Arkansas

Dwight Isely (August 26): There is a rather serious outbreak of the red spider on cotton in northeastern Arkansas, including Mississippi, Craighead, Poinsett, Cross, Crittenden, St. Francis, Lee, and Phillips Counties.

COTTON FLEA (Psallus seriatus Reut.)

Mississippi

R. W. Harned (September 18): I am glad to report that, although we have done some careful scouting throughout many parts of the State, we have been unable to find the so-called cotton flea. If this pest occurs in the State it has certainly not been abundant during the last six weeks.

PINK BOLLWORM (Pectinophora gossypiella Saund.)

Haiti

Geo. N. Wolcott (September 3): The pink bollworm of cotton is at Port-au-Prince and throughout the Cul de Sac Valley, extending to and including every locality where cotton is grown in Santo Domingo. I don't know how much more extensive its distribution is in Haiti.

A FLOWER BEETLE (Euphoria sepulchralis Fab.)

Georgia

J. D. More (August 26): Some few complaints have been received concerning this insect damaging cotton.

COTTON CUTWORM (Prodenia ornithogalli Guen.)

Mississippi

R. W. Harned (September 18): The cotton-boll cutworm was received from about a dozen different counties, most of them in the northern half of the State. However, this insect has been reported from all parts of the State.

GARDEN WEBWORM (Loxostege similalis Guen.)

Mississippi

R. W. Harned (September 18): The garden webworm attracted a great deal of attention during July, especially in the northwestern part of the State. We received a number of reports where several acres of cotton had been completely defoliated by this insect. The only cultivated plants injured, according to reports received at this office, were cotton and alfalfa.

A CRICKET (Anurogryllus muticus DeG.)

Mississippi

R. W. Harned (July 25): A report of June 24 from Kokomo states: "They are very bad on cotton in some places. They resemble the common black cricket but they are light brown in color. They cut down the stalk, cut it up into pieces and carry them into their holes. These holes go 2 or 3 inches into the subsoil and are dug out 1 or 2 inches in diameter at the bottom. One man caught (by digging out) about 3300 in his cotton on second year's land." A further report on July 19 states: "There are sometimes as high as 30 or 40 of these young in one hole. As I stated before, they are a serious pest to cotton, eating whole stalks, cutting off bolls that are practically grown. Since the cotton has become so tough they are not so bad, confining their work to the tender parts of the leaves."

BEAN THRIPS (Heliothrips fasciatus Perg.)

California

T. D. Urbahns (September 8): While visiting the office of the county horticultural commissioner at Visalia a cotton grower brought in plants badly damaged and infested by these thrips. About 10 acres were reported as destroyed. The attack is apparently limited to individual fields.

SUGAR CANE

SUGAR-CANE BORER (Diatraea saccharalis crambidoides Grt.)

Louisiana

W. E. Hinds (August 27): The attack on corn was more common than on cane early in the season but rare even on corn. The attack on cane in the southern half of the State has not developed as usual to date. Borers were very bad in 1923.

SANTO DOMINGO CANE CATERPILLAR (Caliothea mulchella Lathy)

Haiti

Geo. N. Wolcott (September 3): The Santo Domingo cane caterpillar seems quite rare in Haiti.

FOREST AND SHADE-TREE INSECTS

GENERAL FEEDERS

PERIODICAL CICADA (Tibicina septendecim L.)

Louisiana

W. E. Hinds (August 28): Periodical cicadas appeared in the northern part of the State, probably covering East Carroll, West Carroll, Morehouse, Madison, Tensas, Franklin, and Richland Parishes (although reports are not complete or positive) in May and continued until into June. In many localities they were extremely abundant, the ground under some trees being marked with a dozen or more burrows per square foot. Have not received any complaint of their damage to trees, but this must have occurred in due process.

A CICADA (Tibicen resonans Walk.)

Florida

B. L. Boyden (September 6): On August 31 I was passing Plant Park, Tampa, near the Lafayette Street bridge. I heard a noise above the traffic which sounded, as nearly as I can describe it, like a great number of sleigh bells ringing, the same tone and rhythm. It seemed to come from the oaks in the Park. On investigation I found pupal cases of cicadas attached to every tree and telephone post in and adjoining the park. In the ground I found numerous emergence holes. I saw none of the insects themselves as they all seemed to be in the upper branches of the trees. I have passed this park every day during the summer and the 31st was the first day on which I noticed the cicadas. Several days since I have passed and have not heard them. About 11 a. m. on a sunny day finds them most active, or noisy perhaps. (September 20): Under separate cover I am sending an unmounted cicada taken at Alafia, a small town about 7 miles south of Tampa. There was an outbreak in that vicinity similar to the one already reported in Tampa.

WHITE MARKED TUSSOCK-MOTH (Hemerocampa leucostigma S. & A.)

New Jersey

R. B. Lott (September 26): In some sections in the City of Trenton, trees, especially silver maple, are entirely defoliated and at this late date trees are making new growth. Trunks of trees are covered with egg masses.

Ohio

E. W. Mendenhall (September 6): The maples, sycamores, and many other shade trees in Columbus are badly infested by this insect. Many people are alarmed.

Indiana

J. J. Davis (September 22): Many inquiries have been received from cities in central and northern Indiana.

Utah

Geo. F. Knowlton (September 5): White marked tussock-moths are injuring some horse chestnut trees in Logan and Farmington. The trees are nearly stripped of foliage.

BAGWORM (Thyridopteryx ephemeraeformis Haw.)

Ohio

E. W. Mendenhall (August 29): Street and park trees in Columbus are very badly infested with the bagworm, especially maples, boxelders, etc. (September 6): Maple, boxelder, and many other trees are badly infested with the bagworm which is causing much concern in Columbus.

T. H. Parks (September 5): The bagworm has been much more abundant than usual this summer and has damaged evergreen plantings, soft maple, and shrubs. The insect is being received only from the southern half of the State. Cedar, arborvitae, and soft maple are reported most commonly attacked.

H. A. Gossard (September 20): The basketworm is very prevalent over southern Ohio and is now found northward to the Lake, though in former years we did not expect to find it much north of Columbus.

Indiana

J. J. Davis (September 22): The bagworm is again quite abundant and destructive in southern Indiana.

Kentucky

H. Garman (September): The sackworm is exceptionally destructive just now to cedar and other evergreens in parks and on lawns. It is causing many trees to look as if they were killed.

Mississippi

R. W. Harned (September 18): The bagworm was especially serious during July and August on cedar and arborvitae. Practically all of the complaints have come from the northern half of the State.

Kansas

J. W. McColloch (September 20): Numerous reports of bagworm injury continue to come in from eastern Kansas. The principal damage has been to evergreens although in a few cases hard maple and boxelder have been attacked.

Oklahoma

A. N. Caudell (September 10): In Payne County I found bagworms almost completely defoliating evergreen trees and some dead ones were said to be have been killed by such defoliation.

AN OWL MOTH

Germany

Douglas Miller (U. S. Trade Commissioner) (August 4): The month of July has been a gradual checking of the devastation in German forests by the small night-flying moth described in Trade Note No. 686 of July 24. It is now considered that the most of the damage has been done and that no further ravages of the pest will be felt this year. There is also hope of saving some of the trees that have not been severely affected.

A careful survey of the districts where the pest has been most active shows three main areas. The first one is in East Prussia in the country around Allenstein; the second stretched south and east from Frankfurt on Oder; the third is in Pomerania from Stettin to Stargard. There are no later estimates of the amount of timber that will have to be cut and placed on the market this year. It is agreed that it will be a very large quantity and will severely depress the already weak lumber market.

Prussian State authorities are making arrangements to give credit to buyers of state-owned timber so that they will be able to pay for their purchases over a whole season. In some quarters a report has been spread that the lumber cut on this account will be affected by the pest and will not be up to standard. This is vigorously denied by the State foresters who claim that the pest merely sucks the sap from the needles of the fir trees but that this can not have any effect on the wood itself.

BIRCH

BIRCH LEAF SKELETONIZER (Bucculatrix canadensisella Chamb.)

Massachusetts A. I. Bourne (September 26): Still on the increase in Massachusetts. A thorough survey of the entire State by Dr. Fernald and myself indicates that practically all birches in the State are stripped.

A SAWFLY (Fenusa punila Klug)

Connecticut W. E. Britton (September 15): Adults reared from gray birch and sent to Mr. S. A. Hower who identified it as the European Fenusa punila Klug, not known to occur in this country. Dr. Felt has observed it in New York State and has collected material. Reported from Hartford, Windsor, and, New Haven.

CATALPA

CATALPA SPHINX (Ceratomia catalpae Boisd.)

Ohio H. A. Gossard (September 20): The catalpa sphinx has been quite numerous over southern Ohio, doing rather severe damage to catalpa plantings where the acreages are of any size.

Indiana J. J. Davis (September 22): The second brood of catalpa sphinx caterpillars is very abundant and causing considerable defoliation of catalpa trees.

ELM

ELM LEAF-BEETLE (Galerucella luteola Mull.)

New York C. R. Crosby (August 23): A report from Irving-on-Hudson states: "There are as many as 100 on one curtain." where the beetles are in a house.

California California Weekly News Letter, Vol. 6, No. 18 (September 6): Some weeks ago a severe infestation of a destructive pest to elm trees in some sections of the city of Fresno was reported. Specimens were secured and sent to T. D. Urbahns, who reported this pest to be the imported elm leaf-beetle.

At the present time the infestation has spread over about 20 blocks in the City of Fresno and has also been reported from some of the surrounding towns.

The Fresno City Council has purchased two high-powered spray rigs which have been in operation for several days, and the County of Fresno will operate similar high-pressure spray outfits on the trees in the court house park and other country property.

EUROPEAN ELM SCALE (Gossypia spuria Modeer)

Utah

Geo. F. Knowlton (September 5): Still receiving reports of damage from the European elm scale. It is present on elms wherever they are not carefully treated.

ELM APHID (Myzocallis ulmifolia Monell)

Oregon

Sadie E. Keen (September 5): Honeydew in great quantities on sidewalk and paved street at Forest Grove; also hordes of "yellow jackets" attracted by these aphids.

HACKBERRY

HACKBERRY BUD-GALL (Pachypsylla celtidis-gemma Riley)

Nebraska

M. H. Swenk (September 3): The unusual number of complaints from counties in western Nebraska of heavy infestations of hackberry leaves with the hackberry nipple gall, produced by Pachypsylla celtidis-gemma Riley, mentioned in my last report, continued to come in during the early part of August.

LOCUST

LOCUST LEAF-MINER (Chaleus dorsalis Thunb.)

Ohio

H. A. Cossard (September 20): Among the more striking occurrences may be mentioned the prevalence of the locust hispa in southern Ohio. Nearly all the locust trees have been so injured that they display a brown foliage distinguishable for a half-mile distant. This damage is so general that practically all locust trees are involved.

MAPLE

WOOLLY MAPLE-LEAF SCALE (Phenacoccus acericola King)

Ohio

Herbert Osborn (September 19): Specimens of the maple Phenacoccus have been received from Ironton with a report of damage to maple trees in that vicinity.

A LEPIDOPTERON (Paraclemensia acerifoliella Fitch)

New York

CG R. Crosby (September 15): Specimens were received from Copenhagen. (September 18): A large sugar maple bush badly infested at Fernwood.

OAK

OAK WEBWORM (Cacoecia fervidana Clem.)

Michigan

R. H. Pettit (September 9): The oak ugly nest tortricid is present in lesser numbers in the region about West Branch, in the Ogemaw forest. The insect to which I refer is Archips fervidana.

WALKINGSTICK (Diapheromera femorata Say)

Massachusetts

A. I. Bourne (September 26): We have had complaints of common walking sticks from several points in the State. They have been reported as attacking oak and have also been collected from raspberry. Reports extend from the Connecticut River Valley as far East as Worcester.

Michigan

R. H. Pettit (September 9): I wish to state an unusual attack on scarlet oak at West Branch, in the Ogemaw forest, reported by the State forester, who brought in a large number of common walkingsticks. He reported that the attack was in spots, certain areas of as much as 3 acres being entirely defoliated.

OAK SPANGLES (Cecidomyia poculum O. S.)

Virginia

N. Rex Hunt (August 25): The galls on Quercus sp., collected near Clarendon, have been determined by D. B. Young (in the absence of Dr. Felt) as Cecidomyia poculum O.S.

PINE

WHITE-PINE WEEVIL (Pissodes strobi Peck)

Michigan

Eugenia McDaniel (August 25): The white-pine weevil is working in great numbers in the Jack pine forests in and about Alpena. Many of the leaders have been killed back and injury in general is reported by our field men in that region.

PINE BARK LOUSE (Chermes pinicorticis Fitch)

Ohio

Herbert Osborn (September 19): Specimens of the pine bark louse were received from Portsmouth, indicating a rather severe infestation of this insect in that locality.

PINE-LEAF SCALE (Chionaspis pinifoliae Fitch)

Ohio

Herbert Osborn (September 19): Specimens of the pine-leaf scale were received from Portsmouth, indicating a rather severe infestation of this insect in that locality.

LODGEPOLE PINE SAWFLY AND LEAF TYER (Species undetermined)

GENERAL

F. C. Craighead (September 30): Two unknown insects have suddenly become epidemic in the Madison National Forest and Yellowstone National Park in the vicinity of West Yellowstone. These insects were first noted in 1920 on an area of about 1 square mile. Since then they have spread over 100 square miles and nearly every tree is dead on about 30 miles. A similar outbreak of the sawfly not accompanied by the leaf-tyer occurs in the Payette National Forest.

LODGEPOLE PINE NEEDLE-MINER (Recurvaria milleri Busck)

GENERAL

F. C. Craighead (September 30): The lodgepole pine needle-miner which has been in great abundance for the past 10 years in the lodgepole stands in the surrounding Tuolumne Meadows of the Yosemite National Park shows considerable reduction this year. Already approximately 50 per cent of the lodgepole has been killed but there appears to be a chance for the recovery of the remainder with the decline in numbers of this defoliator.

JACK PINE SAWFLY (Species undetermined)

Minnesota

F. C. Craighead (September 30): Dr. S. A. Graham reports the jack pine sawfly outbreak which has been doing a great amount of injury over an enormous area of northern Minnesota has received a severe setback this past year. Extremely high mortality occurred in the larval stage during the past season.

SOUR GUM

SOUR GUM CASE-CUTTER (Antispila nyssaefoliella Clem.)

Massachusetts

A. I. Bourne (September 26): This insect was collected from sour gum trees at Worcester September 20. Later it was also found at Amherst. In the latter case practically every leaf was infested.

SPRUCE

SPRUCE BUDWORM (Harmoloba fumiferana Clem.)

GENERAL

F. C. Craighead (September 30): The infestation of the spruce budworm in the Yellowstone National Park which has been progressing for the past 10 years still shows no signs of abatement. It is gradually enlarging the area originally infested and now has covered an area of about 15 square miles on parts of which at least 90 per cent of the timber is dead. On the Payette National Forest, Idaho, an extensive outbreak of the spruce budworm has developed within the past two years. Many square miles are now infested but just how extensive the outbreak is has not been determined at present. It is very probable that large portions of the great mountain mass of central Idaho are at present attacked. In New Mexico, on the Carson and Santa Fe National Forests, the spruce budworm has also been reported and specimens have been received corroborating these reports. How extensive the damage is has not yet been determined.

SPRUCE GALL APHID (Chermes abietis L.)

New York

Geo. M. Coddington (August 20): The spruce bud louse is common and is found in general throughout the county to be doing considerable damage. The aphids that are commonly found in Westchester County are Chermes abietis, attacking Norway spruce.

C. R. Crosby (August 30): Infested twigs received from Utica.

(CHERMES) GILLETTEA COOLEYI GILLETTE

New York

Geo. M. Coddington (September 11): The spruce bud louse is common and is found in general throughout the county to be doing considerable damage. The aphids that are commonly found in Westchester County are (Chermes) gillettea cooleyi Gill., attacking blue spruce.

C. R. Crosby (September 4): Practically every blue spruce in a park at Middletown infested.

FIR

(CHERMES) GILLETTEA COOLEYI GILLETTE

Oregon

L. P. Rockwood (September 3): Have been very numerous for the past three or four weeks on Pseudotsuga douglassii at Forest Grove. The leaves are coated with honeydew and the sidewalks under the trees are discolored. Not noted as numerous in the last few years.

SYCAMORE

A LACE-BUG (Corythucha ciliata Say)

Louisiana

H. K. Plank and assistants (September 23): Generally distributed over New Orleans and very abundant on Platanus occidentalis, determination made by W. L. McAtee.

WILLOW

WILLOW LEAF-BEETLE (Lina lapponica L.)

Nebraska

M. H. Swenk (September 3): The willow trees in Dakota County were considerably defoliated during the second week in August by this pest.

INSECTS ATTACKING GREENHOUSE
AND ORNAMENTAL PLANTS

ASTER

ASTER APHID (Amuraphis middletonii Thomas)

Nebraska

M. H. Swenk (September 3): A case of serious injury to aster plants by the aster aphid was reported from Custer County.

BOXWOOD

BOXWOOD LEAF-MINER (Monarthropalpus buxi Labou.)

Nebraska

C. R. Crosby (September 4): Infested leaves of boxwood were received from Upper Montclair.

CREPE-MYRTLE

CREPE-MYRTLE APHID (Myzocallis sp.)

Mississippi

H. K. Plank (July 19): Could find none of these aphids on crepe-myrtle trees about Great Southern Hotel at Gulfport, which showed evidence of having been rather heavily infested.

Louisiana

H. K. Plank and assistants (July 23-September 18): The infestation on Lagerstroemia indica is decreasing considerably at New Orleans, due very likely to the activities of predators, chiefly the "twice-stabbed" lady-beetle. Was very abundant. On September 2 a few alate and apterous forms could still be seen on the underside of the newer leaves in scattered sections of the city. (September 18): Conditions about like those on September 2. (September 9): One tree only, out of a large number, was found to have been infested on the grounds of Glen Gordon Farm at Covington, and this one had only a few apterous and alate forms on the newer leaves on sprouts about the base.

CHRYSANTHEMUM

A LACE-BUG (Corythucha marmorata Uhler)

Louisiana

E. Foster (September 23): Severely distributed throughout New Orleans and especially bad on neglected chrysanthemum plants, Rudbeckia laciniata var.

DAHLIA

SUNFLOWER WEEVIL (Rhodobaenus 13-punctatus Ill.)

Kansas

J. W. McColloch (September 20): This species has caused considerable damage to dahlias in two nurseries at Leavenworth.

PEONY

WIREWORMS (Elateridae)

Indiana

J. J. Davis (September 22): Reports of injury to peonies at Decatur on August 27. No specimens were received.

PITTOSPORUM

COTTONY CUSHION SCALE (Icerya purchasi Mask.)

Louisiana

W. D. Whitcomb (September 23): Generally abundant at New Orleans on Pittosporum tibiria in the gardens of this city. Has been successfully controlled by fumigation under tent with Hydrocyanic acid gas 1-1 $\frac{1}{2}$ -3 formula, for 1 hour at rate of 1 oz. av. to 1000 cubic feet, when two treatments are given about two weeks apart.

ROSE

ROSE LEAFHOPPER (Typhlocyba rosae L.)

Utah Geo. F. Knowlton (September 5): Rose bushes in Logan damaged by the leafhoppers, which are numerous.

VERBENA

TRIALEURODES ABUTILONEA HALD.

Louisiana H. K. Plank (July 30): Very abundant about flowers and plants in gardens and dooryards at New Orleans. (September 18): Still present on verbena and wild morning-glory, but decreasing somewhat in abundance.

INSECTS AFFECTING MAN AND

DOMESTIC ANIMALS

MAN

DOG FLEA (Ctenocephalus canis Bouche)

Nebraska M. H. Swenk (September 3): Several cases of severe infestation of houses, barns, and stables with the dog flea were reported during August.

INSECTS INFESTING HOUSES

AND PREMISES

ARGENTINE ANT (Iridomyrmex humilis Mayr),

Mississippi M. R. Smith (August 25): Due to the drought the Argentine ants have given less trouble to date than in any of the last three summers.

CORRECTION M. R. Smith (August 25): In the Vol. 4, No. 4, July 1 number of the Insect Pest Survey Bulletin, on page 149, I notice Itta Bena, Miss., was given as Atta Bena, which is of course incorrect. The figures I gave refer to the percent of control obtained and not to the cost.

A TERMITE (Reticulitermes flavipes Kol.)

Kansas J. W. McColloch (September 20): Termites have seriously damaged the woodwork in a house at Russell. The oak woodwork in a house at Manhattan was damaged to the extent that it had to be torn out. In reaching the woodwork the termites came up

through 2 feet of stone foundation. The cement between the stones was poor and the termites constructed their runways through this. It is interesting to note that the termites avoided the pine studding and sheeting.

A TERMITE (Reticulitermes tibialis Banks)

Nebraska M. H. Swenk (September 3): In Grand Island, Hall County, the termite Reticulitermes tibialis was found to have so seriously injured a residence that many of the joists and most of the flooring and window casings had to be replaced during August. This infestation was of three years standing. Two or three other residences in the neighborhood were also more or less injured by this pest. The same pest was found destroying geraniums, coleus, begonia, and other plants in the greenhouse at the State Penitentiary at Lincoln.

A TERMITE (Kalotermes marginipennis Latr.)

Louisiana H. K. Plank (September 20): Winged adults of this termite were collected in a residence at New Orleans by James Zetek and the writer on July 4, at which time considerable damage to the under timbers of a house was reported by the owner.

CIGARETTE BEETLE (Lasioderma serricorne Fab.)

Kansas J. W. McCulloch (September 20): Beetles of this species were taken at Topeka in large numbers in flax straw used for stuffing upholstered furniture.

EUROPEAN EARWIG (Forficula auricularia L.)

Oregon P. D. Sargent (September 6): First noted at Ashland attacking rose. Damage is very light.

CONFUSED FLOUR BEETLE (Tribolium confusum Duv.)

Kansas J. W. McCulloch (September 20): Adults of this species were received from Norton with the information that they were abundant in a bin of sweet-clover seed.

NOTES FROM THE FEDERAL HORTICULTURAL BOARD, SEPTEMBER 20, 1924.

A CORRECTION The last line on page 257, Vol. 4, No. 6, September 1 number of the Insect Pest Survey Bulletin, is incorrect, as this species is known from Pennsylvania, District of Columbia, North Carolina, Georgia, Florida, Mississippi, Iowa, Texas, New Mexico, Arizona, and California.

INTERCEPTIONS

Mexican oranges were found in ship's stores on board a tank steamer from Tampico, Mexico, at Tampa, Fla., by a collaborator of the Board. Examination showed that one of these oranges

was infested by larvae which were identified as Mexican orange maggots (Anastrepha ludens Loew.) A box of Mexican oranges was also found in the stores of an oil tanker which arrived at New Orleans from Tampico, Mexico, August 25. They were destroyed.

Larva of the Mediterranean fruit fly (Ceratitis capitata Wied.) was taken from an orange in ship's stores of a Spanish steamer arriving at Tampa, Fla., from Spain via Havana, Cuba. The origin of the infested material, so far as could be ascertained, was Malaga, Spain. Inspectors at San Pedro, Calif., found specimens of this pest in coffee berries from Hawaii.

The importance and necessity for careful inspection of passengers' baggage on vessels from Hawaii is thoroughly demonstrated by the following report received from California: The SS. Enterprise, from Honolulu, arrived in quarantine at San Francisco on the morning of August 24th. In the baggage of a Portuguese passenger, there was found a tobacco can containing avocado, mango, and papaya seeds in which a species of weevil was present. The most important feature of this interception, however, was the finding of several live larvae of the Mediterranean fruit fly in the small amount of stringy pulp adhering to the mango seeds. Upon arrival of the vessel at the dock, the trunk and contents were retained on board and subjected to fumigation for a period of 24 hours.

A dangerous weevil, Heilipus perseeae Barber, has been collected frequently of late in avocados from Mexico at El Paso, Tex. It has also been reported in the same host from Mexico at Brownsville, Tex., and Nogales, Ariz.

Since the last letter of information was issued, reports have been received of the following interceptions of larvae of the West Indian fruit fly (Anastrepha fraterculus Wied.) at New York: Found once in mangoes from Cuba; seven interceptions in mangoes from Jamaica, and twice in mangoes from Porto Rico. The same insect is reported from Philadelphia as follows: Taken three times from mangoes from Jamaica, and three times from sapodillas from Jamaica.

Mangoes from Mexico were found as infested with larvae of Anastrepha ludens Wied., at El Paso, Tex., July 12, 1924, and at Laredo, Tex., June 14, 1924. This insect was also taken from peaches from Mexico, at Brownsville, Tex., July 23, 1924, and from sweet limes from Mexico at Laredo, Tex., August 28, 1924.

A thrips (Physothrips atratus Hal.) was collected on castor bean from England at Boston, July 14, 1924. This is a very common European thrips and is not yet recorded from North America. No foreign thrips are desirable as they are very destructive insects.

An elaterid (Agriotes lineatus L.) was intercepted at Philadelphia in potatoes from Sweden. This beetle is a well known pest in Europe on corn and other grains and it is well to keep a check on its possible introduction.

THE INSECT PEST SURVEY BULLETIN

A periodical review of entomological conditions throughout the United States,
issued on the first of each month from April to November, inclusive.

Volume 4

November 1, 1924

Number 8

BUREAU OF ENTOMOLOGY
UNITED STATES
DEPARTMENT OF AGRICULTURE
AND
THE STATE ENTOMOLOGICAL
AGENCIES COOPERATING



OUTSTANDING ENTOMOLOGICAL FEATURES IN THE UNITED STATES FOR OCTOBER, 1924

We wish to express, in this the closing number of Volume 4 of the Insect Pest Survey Bulletin, our sincere appreciation of the continued support and hearty cooperation that we have received from our collaborators. We now have a force adequate to give a very satisfactory cross section of the entomological situation of the United States, and this cross section is being very rapidly realized.

Within the next two months we will issue an index to this volume.

During the month just passed white grubs have become decidedly conspicuous in the Ohio River Valley and in the Upper Plains region, southward to Kansas.

The Hessian fly situation is very favorable throughout the greater part of the wheat belt. Planting after the fly-free date has been generally adopted over most of this territory. The situation is not so encouraging, however, in Kansas.

The chinch bug as a whole has dropped into a position of secondary importance over most of its range, but heavy migration to hibernating quarters was observed in parts of Kansas.

The European corn borer situation is the most serious in the short history of this pest in North America. A general summary of the situation is contained in this issue of the Survey Bulletin.

The Japanese beetle situation is very encouraging, the spread being much less than was anticipated earlier in the season, and in general extends but little more than one township beyond the area infested last year.

The Oriental peach moth is now quite generally distributed over the eastern peach belt, and was seriously abundant during the past year in Pennsylvania and New Jersey. In eastern Maryland it was not nearly as severe as during 1923 and caused but little damage. In this number of the Bulletin is published the results of a recent survey made by the Bureau of Entomology, Federal Horticultural Board, and State Agricultural agencies cooperating.

A very heavy infestation of a green bud-moth (Arzyronloce variegana Hbn.) is reported from the Annapolis Valley section, Nova Scotia. This pest is not recorded from the United States.

The Mexican bean beetle is now recorded as covering practically the entire state of Ohio, eastward to the southeastern tier of counties in Pennsylvania, and eastward into West Virginia and North Carolina. One of the interesting features of the spread of this insect has been the extremely small gain in territory to the south of the region originally infested in Alabama. The insect has swept northward and eastward to the Great Lakes, but has not yet reached the southern third of the State in which it was originally discovered east of its normal habitat in the Rocky Mountain Region.

On the whole there has been a decided reduction in the amount of damage done by the boll weevil over previous years. However, present indications in the southeastern States point to large numbers going into hibernation this fall.

The lesser corn stalk-borer is reported as having been present in destructive numbers in Porto Rico for the first time in the last fifty years.

A very successful control campaign against the gipsy moth has been waged in New Jersey, the infested territory having been cut nearly in half by three years' work directed toward its extermination in that State.

During the last weeks in October unusually heavy flights of the lime tree looper were reported from Massachusetts, Connecticut, and New York.

The white-marked tussock moth is reported as being on the ascendency in Ohio and Nebraska.

The newly introduced birch leaf-miner, Fenusa pumila Klug, appears to be generally established in the eastern part of New York State.

A moth, Ocnerostoma piniariella Zell., which attacks pine needles in parts of Europe was caught in considerable numbers at a trap light in Ithaca, New York, during the last July. As far as we can ascertain there is no recorded note on the occurrence of this insect in the United States, but we are informed that Professor Comstock collected this insect at Ithaca in 1862.*

CEREAL AND FORAGE - CROP INSECTS

GENERAL FEEDERS

GRASSHOPPERS (Acridiidae)

- Wisconsin S. B. Fracker (September): Grasshoppers are reported from Dane County as being more than usually abundant and from Dodge and Jackson Counties as being very numerous. A few have appeared also in Oneida County. In Portage County they ruined 35 per cent of the clover seeding.
- Illinois W. P. Flint (October 20): Grasshoppers have been more abundant than last fall, but not destructive enough to cause any serious damage this year. They may cause some trouble next season.
- Nebraska M. H. Swenk (September): Report of injury by grasshoppers early in September on very young alfalfa in Saline County was the only injury of this sort that came to our attention during the fall.
- Kansas J. W. McColloch (October 17): Injury by grasshoppers (Melanoplus atlantis Riley) shows a decrease over last month although they are still abundant in some areas.

WHITE GRUBS (Phyllophaga spp.)

- Ohio H. A. Gossard (October 21): We have had a good many inquiries for the control of white grubs with reports that these insects are very numerous in cornfields and on sod land.
- Indiana J. J. Davis (October 22): Continue to receive reports from various sections, especially of injury to lawns and corn in the northern part of the State. They were reported common in newly sown wheat fields and doing some damage in west-central Indiana. A report also came to us the past month of injury to privet hedge at Toledo, Ohio.
- Illinois W. P. Flint (October 20): Reports of injury by white grubs continue to come in from many points in central and northern Illinois. Examinations by Mr. J. H. Bigger, of cornfields in Warren County, showed that where corn and soybeans were planted together practically no damage to the soybeans had resulted in fields where corn was nearly destroyed. The grubs were mainly in their second year, and in some fields, second and third year grubs were found together. In eastern Illinois a number of acres have been found where injury by white grubs occurs in corn following corn.
- Wisconsin S. B. Fracker (September): Reported from Marinette and Sauk Counties attacking potato.
- Nebraska M. H. Swenk (September): White grubs continue to be complained of as doing injury in several counties in eastern Nebraska during early September.

Kansas

J. W. McColloch (October 18): The wheat white grub (Phyllonhaga lanceolata Say) is reported as abundant in some wheat fields in Sumner and Kingman Counties.

WHEAT

HESSIAN FLY (Phytophaga destructor Say)

Ohio

H. A. Gossard (October 21): There have been no very notable developments in Ohio entomology the past month unless it may be noted that an examination of the puparia of the Hessian fly at our Medina breeding station indicated that a large percentage of the insects had emerged early. We estimate that 80 to 90 per cent of them had emerged by September 18, the date we put out our emergence cages. Since very little wheat was sown until the safe-seeding dates, I think all Ohio will be fairly safe from the Hessian fly the coming year. Only fields that were seeded prior to September 15 could have been severely attacked this fall and the number of such seedings was very few.

Indiana

J. J. Davis (October 22): The Hessian fly situation is satisfactory. The fly-free date has been satisfactory so far as we have observed. Early sown wheat is noticeably more heavily infested than in 1923.

Illinois

W. P. Flint (October 20): The first wave of the emergence of the fly came practically on normal schedule. Wheat sown September 15 was rather heavily infested, that sown on the 20th was slightly infested, and that on the 25th contained but a trace of infestation. These figures apply to the vicinity of Urbana. Early sown wheat, or that sown ten days or more before the fly-free date, seems to be infested quite heavily in the central section of the State, but very slightly infested in the southern end where only a small number of the fly could be found in the wheat stubble in August. An occasional fly is emerging at the present time, but not enough to cause any serious damage.

Nebraska

M. H. Swenk (September): During the month of September the main fall brood of the Hessian fly was active in the fields, and reached its maximum abundance a little later in the month than usual, especially in the southern counties of Nebraska. Twenty-four counties of southeastern Nebraska are cooperating with the College of Agriculture, through the county agricultural agents and the Department of Entomology, in awaiting the announced fly-free date. Beginning on September 3, the State Entomologist has issued a series of bulletins indicating the progress of the emergence and disappearance of the Hessian fly, nine such bulletins having been issued up to and including October 1. The fly-free date was announced for the northeasternmost counties of Nebraska on September 28, for several counties south of these on September 29, for a number of counties along the Platte Valley westwardly on September 30, and for the remaining counties north of the Platte River as well as several western counties on October 1. For the southernmost Nebraska counties the fly-free date is expected to arrive during the first week in October.

Station No. 1 (Wahoo)

Station No. 2 (Beatrice)

Station No. 1 (Wahoo)				Station No. 2 (Beatrice)			
Per cent emerged puparia : on 100 stubble plants		Number of eggs : on 100 wheat plants		Per cent emerged puparia : on 100 stubble plants		Number of eggs : on 100 wheat plants	
September 26	93.4	:	1,043	September 26	36.9	:	65
" 27	95.1	:	1,295	" 27	48.6	:	705
" 28	95.7	:	745	" 28	49.8	:	660
" 29	95.6	:	66	" 29	48.6	:	1,045
" 30	95.4	:	134	" 30	53.5	:	975
	:	:	:	October 1	50.5	:	1,010
	:	:	:	" 2	65.0	:	115
	:	:	:	" 3	65.1	:	1,665
	:	:	:	" 4	83.9	:	70
	:	:	:	" 5	73.6	:	380
	:	:	:	" 6	87.4	:	0

Iowa M. H. Swenk (September): On September 25, at the Harrison Co., Iowa, station, 51 per cent of the flies had emerged; at the Mills Co., Iowa, Station 42 per cent had emerged; and at the Henry Co., Iowa, Station, 66 per cent had emerged.

Kansas J. W. McCulloch (October 18): It is a little early to determine the Hessian fly situation in fall-sown wheat. There was a large emergence during the last of September and many eggs were deposited on volunteer wheat. Maggots are now present on the volunteer wheat in many sections of the State and there is some complaint of injury to early sown wheat.

EUROPEAN GRAIN APHID (Siphocoryne avenae Fab.)

Kansas J. W. McCulloch (October 17): This aphid has been found in large numbers on the stems and roots of volunteer wheat at St. Francis, Lenora, and Manhattan. It has also been taken on rye at Manhattan.

PLAINS FALSE-WIREWORM (Eleodes opaca Say)

Kansas J. W. McCulloch (October 15): Severe injury to fall-sown wheat has been reported during the last month from Osborne, Rooks, and Trego Counties. It has been very dry in these counties and the seed is not germinating. Reports from Osborne County state that thousands of acres will have to be replanted.

CORN

EUROPEAN CORN BORER (Pyrausta nubilalis Hbn.)

GENERAL Geo. A. Dean (October 29): The nearly completed annual survey activities have disclosed such alarming facts as a spread of 150 per cent in Ohio, with an average increase of 100 per cent in intensity; in Michigan a spread of 300 per cent of the original territory, with a considerable increase in intensity; and a spread of 150 per cent in northwestern Pennsylvania, with a marked increase in intensity. In addition to these developments, a limited infestation has appeared on the northeastern side of Staten Island.

One new spot of infestation has appeared on Long Island close to the commercial sweet corn center, and a series of infestations has developed along the south shore of Connecticut in the towns of Bridgeport, West Haven, Old Lyme, New London, and Stonington.

The Canadian situation, which last year seemed to be fairly well in hand, has broken out with renewed intensity, and the principal dent corn growing areas in Essex and Kent Counties, Ontario, are now so seriously infested as to cause considerable commercial injury. The prevalence of moisture, heavy dews, and high humidity during the incubation of the eggs and during the early or first instar stage of the larvae apparently caused very little mortality of the eggs and permitted large numbers of the larvae to become established in the tassels, leaves, stalks, and ears of the corn plants.

In Massachusetts there has been not only a very marked decrease in the intensity of infestation, but also very little spread in the infestation. This decrease apparently is due principally to the adverse climatic conditions which prevailed during the summer of 1923. The thorough cleanup of fields, gardens, and small weed areas and the fall plowing of practically 90 per cent of the cultivated fields probably also contributed considerably to the decrease in the infestation. In eastern New York the infestation remains about the same, that is, there has been very little spread and very little increase in the intensity of the infestation.

A FLOWER BEETLE (Euphoria sepulchralis Fab.)

Illinois

W. P. Flint (October 20): Adults of this insect have been reported causing severe injury to corn in a number of fields in southern Illinois.

CHINCH BUG (Blissus leucopterus Say)

Kansas

J. W. McColloch (September 29): A farmer at Logan, Kans., reports that he planted 300 acres of wheat on Sudan grass stubble and the chinch bugs have taken all of it. (October 18): Rain in many parts of the State prevented serious damage to corn and sorghums outside of that occurring at the time of migration from the small grains. Bugs are still abundant, however, and the air has been full of adults flying to the grassland for hibernation.

CORN EARWORM (Heliothis obsoleta Fab.)

GENERAL

F. C. Bishopp (September 30): Both early and late field corn examined during the first part of September in the States of Georgia, Alabama, Mississippi, and Louisiana were found to be heavily infested with the corn earworm. Counts showed 90 to 100 per cent of the ears infested. In most fields the percentage ran about 99.

CUTWORMS (Noctuidae)

Wisconsin

S. B. Fracker: Reported from Adams, Chippewa, Clark, Dane, LaCrosse, Marquette, Vernon, and Winnebago Counties.

BANDED IPS (Glischrochilus fasciatus Oliv.)

Ohio

H. A. Gossard (October 21): Received on October 11 from Bloomingburg, injuring the kernels of well-matured corn.

ALFALFA AND CLOVER

GREEN JUNE BEETLE (Cotinis nitida L.)

Kansas

J. W. McCulloch (October 17): Grubs were received from Newman, Kans., which are apparently this species. They were abundant in an alfalfa field and the plants are dying in large areas.

CLOVER-SEED CHALCID (Bruchophagus funebris Howard)

Indiana

J. J. Davis (October 22): A report dated October 14 has been received from the county agent at Auburn, Ind., to the effect that a field of Mammoth clover seed has been ruined by the seed chalcid. The seed was so badly affected that the farmer quit threshing.

RYE

SPOTTED CUCUMBER-BEETLE (Diabrotica 12-punctata Fab.)

Kansas

J. W. McCulloch (October 17): Larvae of this species have caused serious damage to two fields of fall-sown rye. In both cases the rye was planted on land that had been in Sudan grass during the summer.

GRASS

CORRECTION

On page 219, Vol. 4, No. 6, a scale insect, Eriococcus sp., reported by Mr. C. R. Cleveland, was later determined by Dr. T. H. Frison as Eriopeltis festucae Fonsc.

F R U I T I N S E C T S

JAPANESE BEETLE (Popillia japonica Newm.)

GENERAL

Loren B. Smith (October 14): With reference to the spread of the Japanese beetle during the current year, I may say that the insect has not spread as much as was anticipated early in the season. In Pennsylvania the insect has increased the area of its distribution for a distance of about one township in width outside of the area infested last year. In northern New Jersey the spread amounted to about the same as in Pennsylvania; in other words, about 8 to 12 miles outside the previously infested territory. We have found beetles quite generally distributed throughout southern New Jersey and believe the insect to occur more or less generally throughout that territory. There have been numerous reports of the insect occurring in States other than New Jersey, Delaware, and Pennsylvania, but we have followed up all such reports that have come to our attention and in no case have we been able to verify infestations occurring in outside States.

The beetles continue to increase in the older infested territory and during the season just passed we have found as high as 1,500 larvae to a square yard in certain localities. As a result, during the past summer the area of heavy infestation was considerably large and more damage occurred to both peaches and apples, except where they were thoroughly sprayed, than has occurred heretofore.

APPLE

APPLE CURCULIO (Tachypterellus quadrigibbus Say)

Wisconsin

S. B. Fracker (September): Fall flight of this insect associated with Myzus persicae occurred in Dane County.

APPLE FLEA WEEVIL (Orchestes pallicornis Say)

Illinois

W. P. Flint (October 20): This insect was found by Mr. S. C. Chandler to be less abundant in southern Illinois than for several years, but it has been increasing in western Illinois and is now causing injury in a number of orchards in that part of the State.

GREEN BUD MOTH (Argyroplote variegana Hbn.) ?

Canada

Canadian Insect Pest Review (September): The green bud moth has been abundant to an unusual degree in the Annapolis Valley, having been especially numerous in the vicinity of Wolfville and Kentville. This is the most pronounced outbreak in ten years.

A FLOWER BEETLE (Euphoria sepulchralis Fab.)

Kansas

J. W. McCulloch (October 17): These beetles are still common on apples in this vicinity. Injury has also been noted on pears and pumpkins. In practically all cases the injury is secondary, the fruit having been bruised by a hailstorm over a month ago.

CODLING MOTH (Carpocapsa pomonella L.)

Washington

E. J. Newcomer (September 23): Second-brood moths emerged in considerable numbers during the last half of August and the first week of September. Growers report large numbers of worms entering the fruit during this period. Pupation occurred as late as September 1, which is about two weeks later than usual.

A. L. Melander (September 30): I recently drove through this district (Okanogan Valley) and noticed that worm conditions were unusually severe. Last year a frost at blossoming time destroyed virtually all but the topmost blossoms. In some of the orchards it seemed strange to see the only crop of apples perched on the top of the trees. Naturally these apples were out of reach of effective spraying and thus became wormy.

Spokesman Review (September 28): Worm damage is running high in the crop of apples at Brewster, according to N. W. Mogge, manager of the Northwestern Fruit Exchange. One grower bought 900 apple boxes and packed 115, nearly 80 per cent of the fruit being worm-damaged.

E. J. Newcomer (October 20): In 1920 and 1921 several species of codling moth parasites were introduced into the Yakima Valley from the eastern United States. One of these, Ascoaster carpocapsae Vier., has become established, and a few specimens were recovered in 1923 from the orchard in which introductions were made. In 1924, this orchard was cut down, but eight trees were banded in an orchard about a quarter of a mile west. A few parasitized worms were found during July, and the number increased during the latter part of the summer. Of 2,222 worms collected from August 1 to October 20, 348 were parasitized, or 15.7 per cent. Forty adult Ascoaster emerged during the summer, the rest hibernating. These will be released in other orchards in the spring of 1925.

SAN JOSE SCALE (Aspidiotus perniciosus Comst.)

Indiana

J. J. Davis (October 22): The San Jose scale situation is well in hand in Indiana. The absence of scale on fruit at the State Fair this year was a good indicator of the conditions found in the field. The general use of the oil emulsions and other effective scale controls are responsible for this cleanup as evidenced by the fact that orchards not properly treated are heavily infested with the scale.

APPLE MAGGOT (Rhagoletis pomonella Walsh.)

New York

C. R. Crosby (September 29): At Massena this insect was attacking apple.

EUROPEAN RED MITE (Paratetranychus pilosus C. & F.)

Connecticut

Philip Gaman (October 24): Attacking apple, but seems to be less abundant than for several seasons.

Washington

E. J. Newcomer (September 28): This species has been found in orchards throughout north-central Washington. At Kelowna, B. C., a very severe infestation was found August 28 in a pear orchard. Predacious enemies appeared to be absent in this orchard, and the infestation was as severe as it is in June farther south.

PEARS

PLUM CURCULIO (Conotrachelus nenuphar Hbst.)

New York

C. R. Crosby (October 8): Infested pears received from Penn Yan. Eight large trees had practically no good fruit.

PEACH

PLUM CURCULIO (Conotrachelus nenuphar Hbst.)

Georgia Oliver I. Snapp (October 15): A few second-generation eggs are still being deposited. This is an unusually late record for C. nenuphar eggs in this locality (Fort valley).

SAN JOSE SCALE (Aspidiotus perniciosus Comst.)

Georgia Oliver I. Snapp (October 15): A majority of the growers in the Georgia Peach Belt will replace lime-sulphur with lubricating-oil emulsion for the dormant spray this winter. The emulsion will be retailed by local manufacturers at around 25 cents a gallon. On account of this low price very little of the homemade emulsion will be used.

ORIENTAL PEACH MOTH (Laspeyresia molesta Busck)

Connecticut Phillip Garman (October 24): Fruit injury reported from Fairfield and New Haven Counties. More abundant than any previous year.

NOTE: The following distribution records are the results of a joint survey carried on during the past season by the Bureau of Entomology, the Federal Horticultural Board, and the State Agricultural agencies cooperating:

Virginia Typical injury by Oriental peach moth was observed at Norfolk, in the southeastern corner of this State, and Covington, on the western boundary.

North Carolina Positive evidence of this pest was found in Alexander, Catawba, Mecklenburg, and Wake Counties. The survey covered the following Counties without finding evidence of the pest: Buncombe, Burke, Watauga, Guilford, Moore, and Columbus Counties.

South Carolina Positive evidence of the presence of the Oriental peach moth was found in Jasper, Abbeville, Anderson, Charleston, and Spartanburg Counties. The survey also covered Aiken and Barnwell Counties but no positive evidence of the presence of the insect was found in these two counties.

Georgia Positive evidence of the Oriental peach moth was found in Fulton, DeKalb, Putnam, Baldwin, Bibb, Houston, Crisp, Thomas, Lowndes, Richmond, Burke, Chatham, and Glynn Counties. The following Counties were surveyed without results: Morgan, Jasper, Monroe, Pike, Upson, Meriwether, Troup, Coweta, Campbell, Muscogee, Stewart, Sumter, Dooly, and Terrell Counties.

Florida Positive evidence of the Oriental peach moth was found in Madison, Suwanee, Columbia, Baker, Alachua, Nassau, Duval, St. Johns, Marion, Lake, Sumter, Polk, Escambia, Okaloosa, Gadsden, and Leon Counties. No evidence of this insect was found in Putnam, Volusia, Seminole, Orange, Hillsboro, and Lee Counties.

- diana Positive evidence of the presence of this insect was found in Warrick, Vanderburg, and Knox Counties in the southwestern corner of the State.
- ennessee Positive evidence of the presence of the Oriental peach moth was found in Henry, Gibson, Madison, Dixon, Davidson, Williamson, Rutherford, Maury, Bedford, Lawrence, Franklin, Hamilton, Bradley, Monroe, Loudon, Knox, Hamblen, Greene, Washington, and Sullivan Counties. Examinations made in McMinn and Coffee Counties failed to show the presence of this insect. The distribution in this State is general.
- abama Positive evidence of the Oriental peach moth was found throughout this State, records having been received from Madison, Etowah, Calhoun, Jefferson, Shelby, Dallas, Butler, Montgomery, Pike, Lee, Escambia, and Mobile Counties. Examinations made in Baldwin, Clarke, Monroe, Marengo, Bullock, Macon, Cullman, Morgan, and Limestone Counties failed to give evidence of this pest.
- ssissippi Adults were reared or typical injury observed in the following Counties: DeSoto, Marshall, Tishomingo, Lee, Coahoma, Clay, Washington, Hinds, Lauderdale, Forrest, Pearl River, Harrison, and Jackson Counties. Examinations made in Pike, Lincoln, Jones, Madison, Oktibbeha, Lowndes, Leflore, Sunflower, and Alcorn Counties failed to show evidence of this pest.
- uisiana Examinations made in Caddo, Webster, Jefferson, and Orleans Parishes failed to show evidence of the presence of this pest in Louisiana.
- ssouri The only examinations made in this State were carried on in McDonald County where typical injury of Oriental peach moth was observed.
- kansas A very complete survey was carried on in this State and positive evidence of the presence of this pest seemed to be confined to the Counties along the Mississippi River. The following Counties were found to be infested: Mississippi, Cross, Lee, Phillips, and Desha Counties. What appeared to be typical injury by this pest was observed in Pulaski County in the center of the State. What appeared to be this insect was collected in Bentonville, in the northwestern corner of the State, but up to the time of the report the moth had not been reared. A survey carried on in Carroll, Boone, Newton, Washington, Crawford, Johnson, Polk, Searcy, Franklin, Sebastian, Garland, Sevier, Howard, Pike, Clark, Dallas, Jefferson, Cleveland, Bradley, Ouachita, Hempstead, Miller, Pope, Lafayette, Columbia, Union, Drew, Ashley, Chicot, St. Francis, Jackson, and Craighead Counties failed to show evidence of the presence of this insect.
- exas A survey carried on in the northeastern corner of this State, covering Marion, Harrison, Henderson, Cherokee, Anderson, Smith, and Hopkins Counties, failed to show evidence of the presence of this insect.

PEACH BORER (Aegeria exitiosa Say)

Georgia Oliver I. Snapp (October 15): Peach borer moths are on the wing unusually late in the Georgia Peach Belt this year. Many are just now emerging. An excessive rainfall and low temperatures during September are factors responsible for the late emergence this year. Weather conditions during the last week have been ideal for putting out paradichlorobenzene. Many growers have taken advantage of these conditions for gassing their trees.

Illinois S. C. Chandler (October 9): Moth traps and orchard examinations show a rather late hatch of worms in the latitude of Carbondale.

WEST INDIAN PEACH SCALE (Aulacaspis pentagona Targ.)

Louisiana H. K. Plank and assistants:(September 25): This scale appears to be considerably less abundant than last year, and only locally distributed, at New Orleans.

GREEN PEACH APHID (Myzus persicae Sulz.)

Wisconsin S. B. Fracker (September): A heavy flight of fall migrants occurred in Dane County, October 8 to 16.

PLUM

SNOWY TREE-CRICKET (Oecanthus niveus DeG.)

Idaho Monthly Letter of Bureau of Entomology No. 124 (August): M. A. Yothers of the Yakima, Washington, Laboratory, was in southern Idaho August 11 to 13, at the request of Prof.-M. E. Dean, Director of Plant Industry for Idaho, investigating a serious outbreak of the snowy tree-cricket, which is injuring prunes.

PLUM CURCULIO (Conotrachelus nenuphar Hbst.)

Wisconsin S. B. Fracker (September): Reported from Columbia and Price Counties attacking plum.

GRAPE

GRAPE PHYLLOXERA (Phylloxera vastatrix Planch.)

Ohio H. A. Gossard (October 21): This insect was received on October 1 from Mesopotamia on grape.

PECAN

PECAN CIGAR CASE-BEARER (Haplontilia caryaefoliella Clem.)

Alabama H. K. Plank (October 10): In this general region, Grand Bay, overwintering larvae are very abundant about buds and twigs. Conditions point to a severe infestation of this species here next spring.

DIFFERENTIAL GRASSHOPPER (Melanoplus differentialis Thos.)

exas

A. I. Fabis (September 24): Melanoplus differentialis Thos. is very destructive to pecans along Colorado River, Pecan Bayou, and Conchos. They fed extensively on immature pecan nuts during July and August and defoliated trees during September. Defoliation during last season caused shrinkage of kernels and rendered crops from infested trees unmarketable.

LITTLE HICKORY APHID (Monellia caryella Fitch)

exas

A. I. Fabis (September 24): Very injurious on pecan trees at Brownwood which were sprayed with arsenicals during the summer - rare on unsprayed trees.

PECAN LEAF CASE-BEARER (Acrobasis nebulella Riley)

exas

A. I. Fabis (September 24): Larvae were found abundant on native pecan timber along the headwaters of the South Llano River. This insect does not occur north of that section.

PECAN NUT CASE-BEARER (Acrobasis hebescella Hulst)

exas

A. I. Fabis (September 24): Infestation by the second generation was very light locally, but more abundant in San Saba and southward.

CITRUS AND SUBTROPICAL FRUITS

FLORIDA RED SCALE (Chrysomphalus ficus Ashm.)

ouisiana

H. K. Plank and assistants: The freeze of last January at New Orleans, when the temperature went to about 18° to 19°F. in nearly all parts of the city, practically eradicated this scale on plants growing out of doors; to date we have been able to find only a few scales. On host plants growing indoors it continues to be a pest of considerable importance. This insect is attacking Cinnamomum camphora, Citrus spp., Ligustrum spp., and numerous nursery and greenhouse plants.

DICTYOSPERMUM SCALE (Chrysomphalus dictyospermi Morg.)

ouisiana

H. K. Plank and assistants (September 25): Owing largely to the freeze of last January, when the temperature went to about 18° to 19°F. in nearly all parts of the City of New Orleans, this scale is very scarce except in a very few apparently sheltered locations. Some parasites have been noted again this year, but their work at present is inconsiderable. This insect is attacking Cinnamomum camphora and Ficus repens.

RED SPIDERS (Tetranychus spp.)

Louisiana

H. K. Plank and assistants: Red spiders have been very abundant at New Orleans and vicinity this season, and particularly injurious to Cupressus sempervirens pyramidalis, Citrus spp., and arborvitae. These infestations were much augmented by the hot, dry weather which prevailed in this general locality throughout the summer.

GLOVER'S SCALE (Lepidosaphes gloverii Pack.)

Louisiana

H. K. Plank and assistants (August 30): On trees unsprayed since last season at Willswood and on some unsprayed since July of this year, this scale has increased considerably, but is still comparatively scarce. The freeze of last January, when the temperature went to about 16°F., is very largely responsible for the marked decrease from last year. This insect is attacking Citrus spp.

CHAFF SCALE (Parlatoria pergandii Comst.)

Louisiana

H. K. Plank and assistants (August 30): On trees unsprayed since the fall of 1923, and on some unsprayed since July of this year, this scale has increased considerably, but is still comparatively scarce. The freeze of last January, when the temperature went to about 16°F., is very largely responsible for the marked decrease from last year. This insect is attacking Citrus spp.

TRUCK - CROP INSECTS

GENERAL FEEDERS

APHIDIDAE

Wisconsin S. B. Fracker (September): Reported from Manitowoc and Waupaca Counties on dill.

GARDEN SLUG (Agriolimax agrestis L.)

Ohio H. A. Gossard (October 21): We have had a good many inquiries for the control of garden slugs during the past month.

Indiana J. J. Davis (October 22): Garden slugs seem to be quite common in gardens the past two weeks in several sections of the State as far south as Indianapolis. Vegetable garden plants are commonly attacked.

POTATO AND TOMATO

POTATO BEETLE (Leptinotarsa decemlineata Say)

Wisconsin S. B. Fracker (September): Reported from the following counties: Ashland, Chippewa, Manitowoc, Oneida, Sawyer, Washburn, and Waupaca.

LEAFHOPPERS (Jassidae)

Wisconsin S. B. Fracker (September): Reported from Dane, Oneida, and Washburn Counties.

CABBAGE

IMPORTED CABBAGE WEBWORM (Hellula undalis Fab.)

Mississippi M. M. High (October 3): The imported cabbage webworm is causing considerable injury to turnip, mustard, etc., and is receiving some attention.

CUTWORMS (Noctuidae)

Wisconsin S. B. Fracker (September): Reported from Ashland and Chippewa Counties.

BEANS

MEXICAN BEAN BEETLE (Epilachna corrupta Muls.)

Pennsylvania Neale F. Howard (October 24): The Mexican bean beetle was reported on September 9 from Beaver County, one county north of the territory in this State recorded in the last number of the Survey Bulletin.

North Carolina Neale F. Howard (October 24): The most recent reports indicate that the pest has been found in Surry, Yadkin, Catawba, and Mecklenburg Counties.

- West Virginia Neale F. Howard (October 24): The pest was reported during early September from the northeastern part of the State, having been found in Ohio and Hancock Counties.
- Ohio Neale F. Howard (October 24): In Ohio practically the entire State is now infested with the exception of the northwestern two tiers of counties extending from Erie County westward.
- Alabama Neale F. Howard (October 24): Along the southern border a very slight spread is being reported in this State, in no case being more than one county beyond the territory infested in 1921.
- New Mexico J. R. Douglas (October 18): The first bean beetles were observed in fall migration up the Glover's Canyon on September 5 about 10 a.m. There was very little or no wind blowing in the canyon at that time. There were large numbers of beetles in the Glover field on the 10th and 12th of September, the beans were harvested on the 16th and 17th, and on the 25th there were only a few straggling beetles found in the field on horse nettle and Canadian thistles.

A ROOT APHID (Tychea sp.?)

- Nebraska M. H. Swenk (September): From Franklin County we received a report of a root aphid, attacking bush beans, that we have not identified exactly but that are believed to be a species of Tychea.

PEAS

PEA APHID (Illinoia pisi Kalt.)

- Virginia Herbert Spencer (October 18): During the past week we have had complaints of infestations of pea aphids on fall English peas at Norfolk. The majority of the farmers affected are using 3 per cent of nicotine dust. A few are spraying with nicotine sulphate and soap sprays.
- Wisconsin S. B. Fracker (September): Reported from Columbia, Eau Claire, and LaCrosse Counties, attacking peas.

CUCUMBERS

STRIPED CUCUMBER BEETLE (Diabrotica vittata Fab.)

- Wisconsin S. B. Fracker (September): Reported from Adams, Ashland, Columbia, Dodge, Jackson, Manitowish, and Winnebago Counties.

CELERY

AN APHID (Aphis abbreviata Patch)

- New York C. R. Crosby (September 23): There are many more of these than I ever saw before, which probably accounts for an increase in the amount of celery mosaic over previous seasons.

PARSNIPS

APHIDIDAE

Wisconsin

S. B. Fracker (September): Reported from Manitowoc County attacking parsnips.

S O U T H E R N F I E L D - C R O P I N S E C T S

COTTON

BOLL WEEVIL (Anthonomus grandis Boh.)

GENERAL
STATEMENT

Geo. A. Maloney (October 16): On a recent trip made with a committee of the Cotton Council of the Southern Agricultural Workers from September 22 to October 1, I found conditions favorable for weevil multiplication and a probable rather large number to go into hibernation at Florence and Hartsville, S. C., Valdosta, Ga., Gainesville, Fla., and Auburn, Ala. Rains were frequent in these localities during the latter half of September, with cotton producing a plentiful supply of late squares. Weevil punctures of late-set bolls were fairly numerous at these points.

COTTON LEAFWORM (Alabama argillacea Hbn.)

Illinois

W. P. Flint (October 20): The first time for two years no moths of this species have been taken to date in moth traps conducted at Urbana. Only one specimen has been taken in moth traps at Aurora. Usually thousands of specimens of this moth are taken in these traps before fall.

BOLLWORM (Heliothis obsoleta Fab.)

Illinois

S. C. Chandler (October 8): About 1 per cent of bolls is infested. This is the first time this insect has been noted on cotton since the revival of cotton growing three years ago.

COTTON RED SPIDER (Tetranychus telarius L.)

Illinois

S. C. Chandler (September 29): Light infestation of red spider in the vicinity of Cairo. Small patches killed.

TOBACCO

CUTWORMS (Noctuidae)

Wisconsin

S. B. Fracker (September): Reported from Vernon County attacking tobacco.

SUGAR CANESUGAR CANE BORER (*Diatraea saccharalis* Fab.)

Louisiana T. E. Holloway and W. E. Haley (October 28): Our field examinations, which so far cover only a small portion of the sugar parishes, indicate that the borer damage started late, after the cold winter, and did not reach its usual proportions. In fact, on the more northern plantations, the damage is often very low. A comparatively high infestation has been traced to the planting of very badly bored seed cane.

LESSER CORN STALK-BORER (*Elasmopalpus lignosellus* Zell.)

Porto Rico A. H. Rosenfeld (September 29): Crop damaged 1 per cent. The Assistant Entomologist of the Insular Experiment Station mentioned this damage to me early in the month, which we both thought was being caused by a crambid. He has just returned from another trip to Villalba and tells me that the insect is Elasmopalpus lignosellus. There is no recent reference to this species in Porto Rico, Wolcott in his check list (Journal P. R. Dept. Agr. VII-1, p. 199) mentioning it as having been reported a generation or more ago by Moschler and Gundiach.

FOREST AND SHADE-TREE INSECTSGENERAL FEEDERSGIPSY MOTH (*Porthetria dispar* L.)GENERAL

John N. Summers (September 1, 1923-September 1924): There was a general infestation over all of the older infested territory in New England. While the major portion of it was not infested sufficiently to cause much defoliation, there were a few sections which had localized heavy infestations. A number of towns in Maine extending westward from Sebago Lake and a few in the same general section over the New Hampshire line, had numerous small areas ranging from a few trees to several acres where the defoliation by gipsy moth larvae was quite pronounced. Towns immediately around Lake Winnepesaukee in New Hampshire to the north and west had small areas of heavy defoliation.

In Massachusetts a few towns in the vicinity of Taunton and a few in the vicinity of Buzzard's Bay had areas of greater or less extent which were defoliated.

In New Jersey the infested area was reduced considerably. Both the number of colonies and the number of egg clusters found were less than the year before.

Since the larval season one colony of quite a number of eggs clusters was located by Canadian officials at Lacolle, Quebec, a short distance over the line from Alburgh, Vermont.

Federal control work was confined to the "barrier zone" in western New England and eastern New York. All infestations where any egg clusters were found were treated and sprayed thoroughly together with a protective area around each.

The area quarantined for this insect has been extended considerably.

A number of new towns were added in Maine, and a few in New Hampshire and southern Connecticut. All of Vermont is now under quarantine. A considerable number of towns in the areas that have been added are not infested with the gipsy moth but they have been included in the general quarantine as a precautionary measure.

New Jersey

H. B. Weiss (N. J. Dept. Agr. Circ. No. 79, July): When the gipsy moth was first discovered in New Jersey in 1920 it was found, after preliminary scouting, to occur over an area of about 100 square miles. After the first year's scouting the area was found to be approximately 400 square miles. In this area, 855 colonies, totaling over 3,000,000 egg masses, were found and destroyed. After the first year's scouting and spraying work had been done, the territory was again scouted and 216 colonies, totaling 909 egg masses, were found. The infested area continued to remain at approximately 400 square miles. After two years of extermination work, 98 colonies, totaling 1,182 egg masses, were found which then occupied about 250 square miles. After three years of extermination work, a scouting of the territory resulted in finding 48 colonies, totaling 723 egg clusters. The infested territory has been reduced to less than 200 square miles.

BROWN-TAIL MOTH (Euproctis chrysorrhoea L.)

GENERAL

John N. Summers (September 1, 1923--September 1, 1924): There was probably a light infestation over the entire infested area. As in previous reports the area in southeastern New Hampshire and southern Maine was heavily infested. Extensive defoliation was noted in apple orchards in this area but no severe feeding was observed in the woodland. A few other reports have been received indicating fairly heavy infestations but from widely separated localities.

There has been practically no change in the infested area. The island of Mt. Desert, Maine, was found to be infested and has been added to the quarantined area.

SATIN MOTH (Stilpnotia salicis L.)

GENERAL

John N. Summers (September 1, 1923--September 1, 1924): Reports do not indicate a very general abundance of this insect. It is present over a considerable territory and some few towns had rather heavy infestations with considerable defoliation. There has been some extension in the infested area, a few towns having been added in southern New Hampshire and a larger extension southward in Massachusetts. One town, Dennis, on Cape Cod, has also been found to be infested.

LIME-TREE LOOPER (Erannis tiliaria Harr.)

Massachusetts A. P. Morse (October 20-21): Lime-tree winter moth in great numbers flocking to lights at Salem October 20-and 21.

A. I. Bourne (October 24): One point of interest is a flight of the lime-tree winter moth. This flight has been noted in more or less abundance for the last week or 10 days. It was apparently at its height in the immediate vicinity (Amherst), however, about October 19-21, when the moths were very abundant anywhere near or around streetlights, porch lights, etc. Reports which have come in to Dr. Fernald and myself and observations which we have been able to make indicate that this flight was apparently very general over the State. To what degree it was abundant in other sections than here in the Valley I am unable to state.

Connecticut J. L. Rogers (October 23): Adult moths very abundant around street lamps throughout the section around Bridgeport and New Haven.

New York E. P. Felt (October 23): The lime-tree winter moth has attracted much attention during the last 10 days or thereabouts owing to the appearance of millions of moths at lights in the Fulton Valley from at least Kingston, north to Glens Falls and Warrensburg, and also in the foothills of the Adirondacks. The moths not only frequented the lights of cities and villages but were so generally prevalent as to be noted about dwellings in country districts and even by autoists travelling upon the highway.

WHITE-MARKED TUSSOCK MOTH (Hemerocampa leucostigma S. & A.)

Ohio Herbert Osborn (October 11): The white-marked tussock moth has been quite abundant at Columbus, and injuries to apple, elm, and other trees have been noticed.

Nebraska M. H. Swenk (September): The white-marked tussock moth has been more than ordinarily numerous on the shade trees and shrubs of Lincoln and other cities in eastern Nebraska, this being particularly true of the generation that developed largely during the month of September.

FAIR WEBWORM (Hyphantria cunea Drury)

Connecticut W. E. Britton (October 24): Have gone over the State and made observations. Webworms are abundant on orchard and woodland trees in New London County. Less throughout the State except in New London County.

BAGWORM (Thyridopteryx ephemeraeformis Haw.)

New Jersey R. B. Lott (October 7): Silver maples and arborvitae are almost entirely defoliated at Dayton.

Kansas J. W. McColloch (October 17): Reports of bagworm injury to cedars and other evergreens continue to come in. Some farmers report that their trees are completely defoliated and are covered with bags.

JUNIPER SCALE (Diaspis caruoli Targ.)

New York P. J. Chapman (October 7): Infested juniper twigs received from Sea Cliff, Long Island.

ASH

ASH BORER (Podosesia fraxini Lugger)

Nebraska M. H. Swenk (September): Information was received during the second week in September of the killing out of a small grove of ash trees in Cherry County by the ash sesiid borer.

BIRCH

BIRCH-LEAF SKELETONIZER (Bucculatrix canadensisella Chamb.)

New York E. P. Felt (October 23): The birch-leaf skeletonizer has not been abundant in this State except for a little, quite restricted defoliation on the sand plains west of Albany. This is in marked contrast to conditions reported from New England even as near by as the eastern slopes of the Berkshires.

BIRCH-LEAF-MINER (Fenusa pumila Klug.)

New York E. P. Felt (October 23): The newly introduced birch leaf-miner, Fenusa pumila Klug, appears to be generally established in the eastern part of the State, north at least to the vicinity of Glens Falls and along the D. & H. Railroad west to Binghamton. There were large areas of sprout birch in the vicinity of Saratoga with the young leaves very generally browned as a result of the work of this insect. There appears to be an extended breeding season.

CAMPHOR

CAMPHOR THRIPS (Cryptothrips floridensis Watson)

Louisiana H. K. Plant (September 6): Well distributed in camphor plantings in the vicinity of Goodbee, abundant, and causing considerable injury in many cases. Crop damaged about 55 per cent. (September 25): Generally distributed over New Orleans and vicinity but apparently injurious only in scattered locations. A slight increase over last month and damage of about 30 per cent.

ELM

ELM BORER (Saperda tridentata Oliv.)

Nebraska M. H. Swenk (September): The usual number of reports of injury to elm and poplar trees by this species were received during the month.

MARCH

MARCH SAWFLY (Pematus erichsonii Hartig)

Wisconsin S. B. Fracker (September): Reported from Manitowoc attacking tamarack.

LOCUST

LOCUST LEAF-MINER (Chalepus dorsalis Thunb.)

New Jersey R. B. Lott (October 11): The pest is doing considerable damage to black locust near Plainfield, and was also noted at Red Bank, Bridgeton, Vineland, and Camden.

PINE

WESTERN-PINE BEETLE (Dendroctonus brevicornis Lec.)

California and Oregon F. C. Craighead (October 28): This pest has shown marked increase in numbers throughout the greater part of the forested region of California and Oregon, and in many forests where it was endemic last year it is now epidemic.

PINE NOCTUID (Panolis griseovariegata Goeze)

Germany S. S. Crossman (October 16): Speaking of the devastated forests in Brandenburg and West Prussia, particularly the pines, I wish to state that while I was traveling from the Polish frontier toward Berlin for two hours after leaving the Polish frontier we passed through a pine area which was almost 100 per cent defoliated. I was, of course, on a train at this time and was unable to see any of the insects which were causing the injury. I asked several entomologists in Berlin if they knew the insect which was causing the damage and they told me it was Panolis griseovariegata Goeze. Of course, I am not positive that this is the species which caused the damage, not having seen it myself, but I know this insect is at times a serious enemy of pine in Europe.

A SAWFLY (Lophyrus pini L.)

Poland S. S. Crossman (October 16): In the southern part of Poland this year there was severe feeding on pine by this insect and I understand that this insect is quite often very serious.

NUN MOTH (Lymantria monacha L.)

Germany S. S. Crossman (October 16): In 1922 I saw very large areas of pine stripped near Breslau and generally over southeastern Germany by "die nune" (L. monacha L.) and was told that the year before it was very bad over most of Bohemia.

PINE-SHOOT MOTH (Evetria frustrana bushnelli Busck)

Kansas

J. W. McCulloch (October 17): Larvae of this species were received from Tyro, Montgomery County, with the information that they were seriously injuring pine trees in that vicinity.

A MOTH (Ocnorostoma pinjariella Zeller)

New York

W. T. M. Forbes (July 13): Caught in some numbers at trap for the past week at Ithaca. Not recorded from United States but specimens were taken by Prof. J. H. Comstock here in 1882. (Listed by Otto Nüsslin (Leitsaden der Forstinsektenkunde) as a leaf-miner on pine and sometimes injurious - J.A.H.)

POPLAR

OYSTER-SHELL SCALE (Lepidosaphes ulmi L.)

Ohio

E. W. Mendenhall (October 10): The Carolina poplar trees, used as street trees at Sidney, are badly infested with the oyster-shell scale and some of them are dying with the pest.

POPLAR BORER (Saperda calcarata Say)

Nebraska

M. H. Swenk (September): The usual number of reports of injury to elm and poplar trees by this species were received during the month.

WILLOW

ELM SAWFLY (Cimbex americana Leach)

New York

P. J. Chapman (October 10): Specimens received from Jamestown. Found in great numbers on willow.

I N S E C T S A T T A C K I N G G R E E N H O U S E
A N D O R N A M E N T A L P L A N T S

A MYRIOPOD (Scutigera immaculata Newp.)

Indiana

J. J. Davis (October 22): The small, white hothouse myriopod Scutigera immaculata Newp., determined by Mr. Chamberlin, was first reported to us last January as damaging lettuce in greenhouses. It again made its appearance in at least two lettuce houses in the State, in one of which the damage is severe. The animals occur especially where animal manure is used freely and where there is an abundance of moisture. They gnaw the roots of the tender seedling lettuce plants

soon after transplanting in the beds, causing the plants to wilt or "stand still." Injury to seedling radishes was also noticed out of doors in acres richly fertilized. In this same area the radishes, which were mature when examined two weeks ago, showed injury to the extent of tiny holes into the root, almost certainly the work of this animal.

ASTER

CORN-ROOT APHIS (Aphis maidi-radicis Forbes)

Ohio

H. A. Gossard (October 21): The corn root aphid was received on September 9 from Bucyrus on aster and on October 17 from Coshocton.

EUONYMUS SCALE (Chionaspis euonymi Comst.)

New York

P. J. Chapman (October 12): Stems of Euonymus vigetis are thickly covered with this scale at Katonah.

IRIS

WIREWORMS (Elateridae)

Ohio

Herbert Osborn (October 11): Wireworms have been reported injuring iris at Van Wert.

Indiana

J. J. Davis (October 22): Wireworms were received October 6 from Van Wert, Ohio, where they were severely attacking cultivated iris.

INSECTS AFFECTING MAN

AND DOMESTIC ANIMALS

MAN

HUMAN FLEA (Pulex irritans L.)

GENERAL
STATEMENT

F. C. Bishopp (September 30): These fleas were reported as causing annoyance to farmers in several instances in Ohio, Illinois, and Indiana.

CAT AND DOG FLEA (Ctenocephalus felis Bouche' and C. canis
Curtis)

GENERAL
STATEMENT

F. C. Bishopp (September 30): Many infestations of households by these species were reported in the Atlantic Coast States and also in northern Texas.

Texas

F. C. Bishopp (October 25): Throughout the late summer and fall considerable trouble has been experienced in various parts of the United States due to the infestation of houses and dog kennels with fleas. The use of creosote oil as a control measure is becoming more general.

SADDLE-BACK CATERPILLAR (Sibine stimulea Clem.)

Indiana

J. J. Davis (October 22): The saddle-back caterpillar was received September 23 and 24 from two localities in southern Indiana. In one instance contact with the caterpillars caused considerable swelling on the arm of a man, with resulting severe pain.

HORSES

BLACK HORSE-FLY (Tabanus atratus Fab.)

GENERAL
STATEMENT

F. C. Bishopp (September 30): Specimens of this fly were observed to be attacking cattle and horses in several of the Gulf States. In the vicinity of North Shore, Miss., as many as 5 or 6 flies were present per animal.

A HORSE-FLY (Tabanus lineola Fab.)

GENERAL
STATEMENT

F. C. Bishopp (September 30): This species was found to be seriously annoying to livestock pastured near swampy areas in the vicinity of Jacksonville, Fla., on September 1 and at certain other points near the Gulf Coast in Louisiana, Mississippi, and Alabama. The number per animal in the worst infested herds ranged from 2 to 50.

HORSE BOTS (Gastrophilus intestinalis DeG., G. nasalis L.,
and G. haemorrhoidalis L.) *

Texas

F. C. Bishopp (September 30): Although G. intestinalis and G. nasalis appeared unusually early in the summer in the vicinity of Dallas, they have not been much in evidence recently. A few flies were found to be attacking horses in September. (October 25): The common horse bot-flies were fairly abundant in the vicinity of Dallas during October. Some annoyance was produced by the oviposition of flies on work horses. The throat bot-fly was about normal in numbers during October in the vicinity of Dallas. Work animals were decidedly annoyed by its attacks.

GENERAL
STATEMENT

F. C. Bishopp (October 25): Considerable interest is being shown in the treatment of horses with carbon disulphide in various parts of the north-central States, particularly in Minnesota, Iowa, North Dakota, and South Dakota. This interest is being stimulated by commercial companies who are selling carbon disulphide capsules.

CATTLE

SCREWORM (Chrysomya macellaria Fab.)

Texas

F. C. Bishopp (September 30): Owing to the hot, dry weather which has prevailed throughout the Southwest most of the summer and fall, little damage has been experienced by stockmen from the screwworm. Showers falling in September may cause sufficient increase in the fly number to result in infestations of sheep following shearing, which will be in full sway about October 10. (October 25): Screwworm cases in southwestern Texas during October have been much less abundant than normal. Although some sheep and goats were infested after shearing, the cases were usually light and healed after a single treatment.

At Worth packing houses on this date flies are fairly numerous and are giving some trouble trying to get indoors on account of cool nights. The proportion of the species is about as follows: C. macellaria 45 per cent, M. domestica L. 47 per cent, P. regina Meig. 7 per cent, and Lucilia sericata Meig. and other species 1 per cent.

HORN FLY (Haematobia irritans L.)

GENERAL
STATEMENT

F. C. Bishopp (September 30): During the latter part of September horn flies increased decidedly in number in various parts of Texas, owing to a cessation of the hot, dry weather which had held the pest closely in check during the summer. At Dallas on September 25 the number of flies per animal ranged from 25 to 2,500 and dairymen were beginning to complain of the worry produced among their cattle.

Comparatively few horn flies were present on livestock in northern Florida and southern Georgia, Alabama, Mississippi, and Louisiana on September 4 to 11. The usual dry weather of the late summer is undoubtedly responsible for this condition.

Texas

F. C. Bishopp (October 25): Horn flies have decreased in numbers during the last few days. During the first two-thirds of the month they were about normal in abundance and their annoyance combined with that of the stable fly seriously affected milk production in dairies in north-central Texas.

STABLE FLY (Stomoxys calcitrans L.)

GENERAL
STATEMENT

F. C. Bishopp (September 30): September 5 to 11, with the exception of a small area in southern Mississippi near Biloxi, stable flies were causing little annoyance to livestock along the highway from Jacksonville, Fla., to Houston, Tex. Near Biloxi cattle were observed to be infested with from 25 to several hundred flies each.

In the vicinity of Dallas, Texas, up to September 25, stable flies had not materially increased in numbers, the average number per animal ranging from none to about 30. Teams breaking stubble land are not experiencing the amount of annoyance usual for this time of the year.

Texas F. C. Bishopp (October 25): During this month stable flies have been causing serious annoyance to livestock in various parts of north and central west Texas. The trouble seems to be more or less local, the supply emanating from favorable breeding places on certain farms and ranches. Some dairies in the vicinity of Dallas reported a decrease from 5 per cent to 10 per cent in milk production.

OX WARBLE (Hypoderma lineatum DeVill.)

Texas F. C. Bishopp (September 30): D. C. Parman reports the finding of late fifth-stage larvae of this species in the subcutaneous tissues on the backs of cattle on September 5. This indicates that the larvae first appeared on the backs of the cattle this year about August 15, which is one of the earliest records for that section.

INSECTS INFESTING HOUSES
AND PREMISES

YELLOW-FEVER MOSQUITO (Aedes aegypti L.)

Texas F. C. Bishopp (September 30): These mosquitoes are present in about the usual numbers in the vicinity of Dallas. No cases of dengue have been reported to this laboratory. (October 25): Yellow-fever mosquitoes were fully as abundant as normal for this time of the year (October). A few cases of dengue fever were reported from different places in Texas during the month, the first appearance being in the latter part of September. The yellow-fever scare which came from the diagnosis of a case of the disease in Houston has subsided completely, since there has been no spread of the malady whatever.

HOUSE FLY (Musca domestica L.)

Texas F. C. Bishopp (September 30): There was a marked increase in the number of house flies in the vicinity of Dallas during the latter half of September. They had become extremely scarce early in the summer owing to the hot, dry weather.

SCORPIONS

Texas F. C. Bishopp (September 30): A number of complaints have been received from residences in the vicinity of Dallas that they were infested with scorpions. Some report finding as many as 4 in a house during one afternoon.

A TERMITE (Reticulitermes flavipes Kol.)

Illinois W. P. Flint (October 20): Complaints of damage by this insect have been received during the past year. In some cases the injury has been quite severe. Recently an oak floor in a house which had just been completed was found to be badly damaged by this insect.

GRANARY WEEVIL (Calendra granaria L.)

Illinois W. P. Flint (October 20): Owing partly to the fact that much of the wheat and oats were threshed when the grain was wet and went into the bins in a dampened condition, many complaints are being received of damage by this insect.

ANGOUMOIS GRAIN MOTH (Sitotroga cerealella Oliv.)

Illinois W. P. Flint (October 20): Owing partly to the fact that much of the wheat and oats were threshed when the grain was wet and went into the bins in a dampened condition, many complaints are being received of damage by this insect.

CONFUSED FLOWER BEETLE (Tribolium confusum Duv.)

Illinois W. P. Flint (October 20): Owing partly to the fact that much of the wheat and oats were threshed when the grain was wet and went into the bins in a dampened condition, many complaints are being received of damage by this insect.

FOREIGN GRAIN BEETLE (Cathartus advena Waltl.)

Illinois W. P. Flint (October 20): Owing partly to the fact that much of the wheat and oats were threshed when the grain was wet and went into the bins in a dampened condition, many complaints are being received of damage by this insect.

BOOKLOUSE (Troctes divinatoria Muell.)

Kansas J. W. McColloch (October 15): Heavy infestations of booklice have been found in upholstered furniture in warehouses at Topeka and Kansas City.

Ohio H. A. Gossard (October 21): Received on October 6 from Leetonia where it was attracting attention by its numbers in upholstery.

AN ANT (Crematogaster laeviuscula Mayr)

Kansas Roger C. Smith (September and October): Reported from Manhattan in houses. More this year. Two reports of rather heavy swarms. They probably live within the walls and winged forms swarm out every few months. One house was infested for at least three years. Have had six major swarms and several minor ones. The woodwork does not show very much damage.

NOTES FROM THE FEDERAL HORTICULTURAL BOARD, OCTOBER 15, 1924.

INTERCEPTIONS

A very injurious thrips, identified by Prof. J. R. Watson as Liothrips yasegaki, was collected on lily bulbs from France, at Philadelphia, August 18 and 19, 1924. This pest is reported as having become established in Los Angeles County, Calif., where it was introduced on lily bulbs from France. What apparently is the same species is described as very injurious on lily bulbs in Japan. This is a pest which is well worth keeping out of the country.

The pink bollworm was again found at New York on July 31, infesting cotton seed in old cotton bagging from Alexandria, Egypt.

Anastrepha fraterculus Wied. was taken at Laredo, Texas, August 31 in guavas from the interior of Mexico. This insect has also been reported from New York and Philadelphia as intercepted on several occasions recently in mangoes from Jamaica.

Anastrepha ludens Loew, was collected in quince July 30, 1921, and in pear September 8, 1924, at Laredo, Texas. Both interceptions are reported as having come from the interior of Mexico.

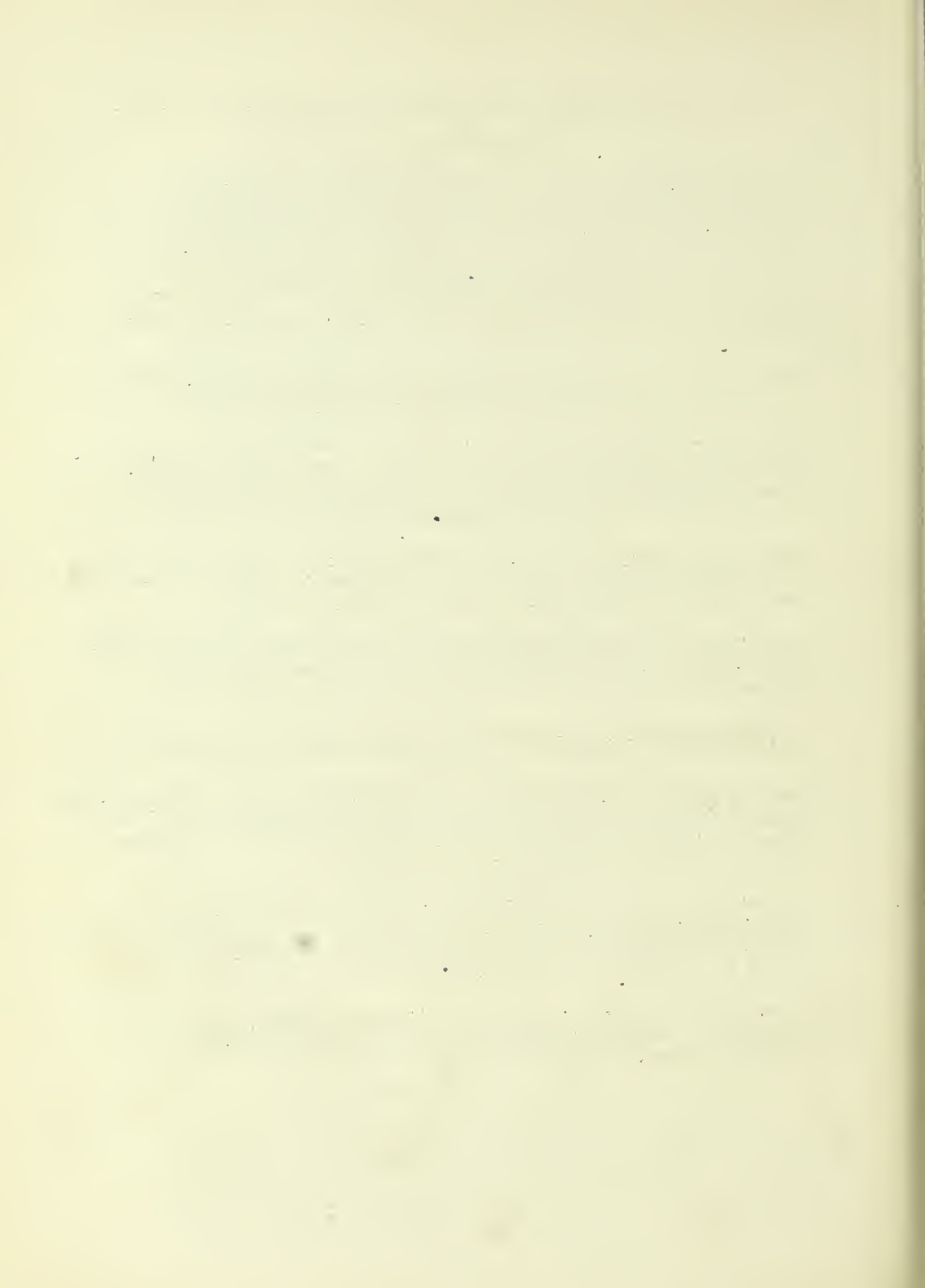
Specimens of a fruit fly, identified as probably a new species of Anastrepha, were intercepted at New York August 12 in mangoes from Porto Rico.

Agriotes lineatus L. is reported as infesting turnip root (Rutabaga) from England. Specimens were collected at New York September 17.

Another insect, the turnip gall weevil (Ceuthorrhynchus pleurostigma Marsh.) was found in white globe turnips from England at New York City on August 6. This insect is a pest on various vegetables in England and does not occur in this country.

An important and possibly dangerous wireworm, determined as Athous haemorrhoidalis Fab., was collected in lily bulbs from France at New York August 23. This insect attacks vegetables, grains, and roots of grasses and is very destructive.

Larvae of the sweet potato weevil (Euscepes batatae Waterhn.) were reported as infesting sweet potatoes from Porto Rico at New York September 5.



THE INSECT PEST SURVEY BULLETIN

A periodical review of entomological conditions throughout the United States,
issued on the first of each month from April to November, inclusive.

Volume 4

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DEPARTMENT OF AGRICULTURE
AND
THE STATE ENTOMOLOGICAL
AGENCIES COOPERATING

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Abbot's sphinx - - - - -	<u>Sphecodina abbotti</u> Swains
Alfalfa nematode - - - - -	<u>Tylenchus diosaci</u> Kuhn
Alfalfa weevil a.n.o. - - - - -	<u>Phytonomus pesticus</u> Gyll.
American grasshopper - - - - -	<u>Schistocerca americana</u> Drury
Angoumois grain moth a.n.o. - - - - -	<u>Sitotroga cerealella</u> Oliv.
Angulated froghopper - - - - -	<u>Leptocryptus quadrangularis</u> Say
Anomala - - - - -	<u>Anomala orientalis</u> Waterh.
Apple thorn skeletonizer - - - - -	<u>Hemiphysalis pariana</u> Clerck
Apple curculio a.n.o. - - - - -	<u>Tachypterellus quadrigibbus</u> Say
Apple flea-weevil - - - - -	<u>Orchestes pallicornis</u> Say
Apple fruit-chaffer - - - - -	<u>Metachroma interruptum</u> Say
Apple grain aphid a.n.o. - - - - -	<u>Rhopalosiphum prunifoliae</u> Fitch
Apple leafhopper a.n.o. - - - - -	<u>Empoasca mali</u> LeB.
Apple leaf-miner - - - - -	<u>Tischeria malifoliella</u> Clemens
Apple leaf-skeletonizer a.n.o. - - - - -	<u>Canarsia hammondi</u> Riley
Apple maggot a.n.o. - - - - -	<u>Rhagoletis pomonella</u> Walsh
Apple red bug - - - - -	<u>Heterocordylus malinus</u> Reut.
Apple seed-chalcid a.n.o. - - - - -	<u>Syntomaspis cuneatorum</u> Boh.
Apple-tree pruner - - - - -	<u>Hyperallus villosus</u> Fab.
Arborvitae leaf-miner - - - - -	<u>Arzvesthia thuella</u> Pack.
Argentine ant a.n.o. - - - - -	<u>Iridomyrmex humilis</u> Mayr
Armyworm a.n.o. - - - - -	<u>Cirphis unipuncta</u> Haw.
Ash borer - - - - -	<u>Podocesia fraxini</u> Lugger
Asparagus beetle - - - - -	<u>Crioceris asparagi</u> L.
Aster aphid - - - - -	<u>Anuraphis middletonii</u> Thomas
Australian tomato weevil - - - - -	<u>Desiantha nociva</u> Lea
Azalea bark scale - - - - -	<u>Eriococcus azaleae</u> Comst.

B

Bagworm a.n.o. - - - - -	<u>Thyridopteryx ephemeraeformis</u> Haw.
Banded flea-beetle a.n.o. - - - - -	<u>Systema taeniata</u> Say
Banded ips - - - - -	<u>Clischochilus fasciatus</u> Oliv.
Banded leafhopper - - - - -	<u>Erythroneura trilineata</u> Fitch
Barberry aphid - - - - -	<u>Liosomaphis berberidis</u> Kalt.
Barnacle scale a.n.o. - - - - -	<u>Ceroplastes cirripodiformis</u> Comst.
Bean aphid - - - - -	<u>Aphis rumicis</u> Linn.
Bean leaf-beetle a.n.o. - - - - -	<u>Cerotoma trifurcata</u> Foerst.
Bean leaf-roller a.n.o. - - - - -	<u>Eudamus proteus</u> L.
Bean thrips - - - - -	<u>Heliothrips fasciatus</u> Perg.
Bean tingitid - - - - -	<u>Gargaphia iridescens</u> Champ.
Bean weevil - - - - -	<u>Mylabris oblectus</u> Say
Beet leafhopper a.n.o. - - - - -	<u>Eutettix tenella</u> Baker
Beet root aphid - - - - -	<u>Pemphigus betae</u> Doane
Birch leaf-skeletonizer - - - - -	<u>Bucculatrix canadensisella</u> Charb.

See

Biting dog louse - - - - -	<u>Trichodectes latus</u> Nitzsch
Black carpet beetle a.n.o. - - - - -	<u>Attagaeus piceus</u> Oliv.
Black chrysanthemum aphid - - - - -	<u>Macrosiphoniella sanborni</u> Gill.
Black-headed cranberry worm - - - - -	<u>Rhopobota naevana</u> Hbn.
Black-lined cutworm - - - - -	<u>Agrotis fennica</u> Tausch.
Black swallow tail butterfly - - - - -	<u>Papilio polyxenes</u> Fab.
Black vine weevil - - - - -	<u>Frachyrhinus sulcatus</u> Fab.
Boll weevil a.n.o. - - - - -	<u>Anthonomus grandis</u> Boh.
Book louse a.n.o. - - - - -	<u>Trietes divinatoria</u> Muell.
Boxelder aphid - - - - -	<u>Periphyllus negundinis</u> Thos.
Boxelder plant-bug - - - - -	<u>Leptocoris trivittatus</u> Say
Boxwood leaf-miner a.n.o. - - - - -	<u>Monarthropalpus buxi</u> Labou
Brown colaspis - - - - -	<u>Colaspis brunnea</u> Fab.
Brown plum aphid - - - - -	<u>Hysteroneura setariae</u> Thos.
Brown-tail moth a.n.o. - - - - -	<u>Euproctis chrysorrhoea</u> L.
Bud-worm moth - - - - -	<u>Tmetocera ocellana</u> D. & S.
Buffalo treehopper a.n.o. - - - - -	<u>Ceresa tubalus</u> Fab.
Bumble flower beetle - - - - -	<u>Euchoria inda</u> L.

C

Cabbage aphid a.n.o. - - - - -	<u>Brevicoryne brassicae</u> L.
Cabbage looper a.n.o. - - - - -	<u>Autographa brassicae</u> Riley
Cabbage maggot - - - - -	<u>Hylomyia brassicae</u> Bouche
Cabbage webworm a.n.o. - - - - -	<u>Hellula undalis</u> Fab.
Cabbage worm - - - - -	<u>Fontia rapae</u> L.
Cambium-curculio - - - - -	<u>Conotrachelus anaglypticus</u> Say
Camphor thrips a.n.o. - - - - -	<u>Cryptothrips floridensis</u> Watson
Canyon horse-fly - - - - -	<u>Tabanus rubescens</u> Bellardi
Carabid beetle - - - - -	<u>Anisotarsus nitidinervis</u> Lec.
Carpenter ant - - - - -	<u>Camponotus herculeanus pennsylvanicus</u>
Castor-bean tick - - - - -	<u>Ixodes ricinus</u> L. DeG.
Catalpa midge - - - - -	<u>Cecidomyia catalpae</u> Comst.
Catalpa sphinx a.n.o. - - - - -	<u>Ceratonia catalpae</u> Poisd.
Chaff scale a.n.o. - - - - -	<u>Parlatoria pearlandii</u> Comst.
Cherry aphid a.n.o. - - - - -	<u>Myzus cerasi</u> Fab.
Cherry fruit-fly a.n.o. - - - - -	<u>Rhagoletis cingulata</u> Loew
Cherry leaf-beetle - - - - -	<u>Galerucella cavicollis</u> Lec.
Cherry leaf-miner - - - - -	<u>Protenusa collaris</u> McGill.
Cherry scale a.n.o. - - - - -	<u>Aspidiotus forbesi</u> Johnson
Chicken head louse - - - - -	<u>Linurus heterographus</u> Nitzsch
Chicken mite - - - - -	<u>Dermanyssus gallinae</u> Redi
Chiggers - - - - -	<u>Trombicula tlalzahuatl</u> Murray
Chinch bug a.n.o. - - - - -	<u>Blissus leucotermus</u> Say
Chrysanthemum gall-midge a.n.o. - - - - -	<u>Diarthronomyia hypogaea</u> F. Loew
Cigar case-bearer a.n.o. - - - - -	<u>Coleophora fletcherella</u> Fernald
Cigarette beetle a.n.o. - - - - -	<u>Lasioderma serricornis</u> Fab.
Citrophilus mealybug - - - - -	<u>Pseudococcus gahani</u> Green
Citrus mealybug a.n.o. - - - - -	<u>Pseudococcus citri</u> Risso
Citrus whitefly - - - - -	<u>Dialeurodes citri</u> Ashm.

See

Clay-backed cutworm - - - - -	<u>Feltia gladiaria</u> Morr.
Clover leaf weevil a.n.o. - - - - -	<u>Hypera punctata</u> Fab.
Clover mite - - - - -	<u>Bryobia praetiosa</u> Koch
Clover seed chalcid a.n.o. - - - - -	<u>Bruchonphagus funebris</u> Howard
Clover seed midge - - - - -	<u>Dasyneura leguminicola</u> Lint.
Codling moth a.n.o. - - - - -	<u>Carpocapsa pomonella</u> L.
Coffee-bean weevil - - - - -	<u>Araecerus fasciculatus</u> DeG.
Colorado potato beetle a.n.o. - - - - -	<u>Lentiniotarsa decemlineata</u> Say
Columbine borer - - - - -	<u>Papaipema purpurifascia</u> G. & R.
Columbine leaf-miner - - - - -	<u>Phytomyza aquilegiae</u> Hardy
Common red spider - - - - -	<u>Tetranychus telarius</u> L.
Common smut beetle - - - - -	<u>Phalacrus politus</u> Welsh.
Conchuela - - - - -	<u>Chlorochroa ligata</u> Say
Confused flour beetle - - - - -	<u>Tribolium confusum</u> Duv.
Corn ear-worm a.n.o. - - - - -	<u>Heliothis obsoleta</u> Fab.
Corn leaf-aphid - - - - -	<u>Aphis maidis</u> Fitch
Corn root-aphid - - - - -	<u>Anuraphis maidi-radicis</u> Forbes
Corn silk beetle - - - - -	<u>Luperodes varicornis</u> Lec.
Cotton-boll cutworm - - - - -	<u>Prodenia ornithogalli</u> Guen.
Cotton flea- - - - -	<u>Psallus seriatus</u> Reut.
Cotton leaf-worm - - - - -	<u>Alabama arpillacea</u> Hbn.
Cotton square-borer - - - - -	<u>Uranotes melinus</u> Hbn.
Cottonwood leaf-beetle - - - - -	<u>Lina scripta</u> Fab.
Cottonwood scale - - - - -	<u>Chionaspis ortholobis</u> Comst.
Cottony cushion scale a.n.o. - - - - -	<u>Icerva purchasi</u> Mask.
Cottony grass scale - - - - -	<u>Eriopeltis festucae</u> Fonsc.
Cottony maple scale - - - - -	<u>Pulvinaria vitis</u> L.
Cottony pine scale - - - - -	<u>Pseudophilippia quantancii</u> Ckll.
Cowpea curculio - - - - -	<u>Chalcodermus aeneus</u> Boh.
Cranberry weevil - - - - -	<u>Anthonomus suturalis</u> Lec.
Currant and gooseberry maggot - - - - -	<u>Epochra canadensis</u> Loew
Currant aphid a.n.o. - - - - -	<u>Myzus ribis</u> L.
Currant stem-girdler a.n.o. - - - - -	<u>Jenus integer</u> Norton
Cutworms - - - - -	Noctuidae
Cyclamen mite a.n.o. - - - - -	<u>Tarsonemus pallidus</u> Banks

D

Dark mealworm - - - - -	<u>Tenebrio obscurus</u> Fab.
Dictyospermum scale - - - - -	<u>Chrysomphalus dictyospermi</u> Morg.

E

Eight-spotted forester a.n.o. - - - - -	<u>Alypia octomaculata</u> Fab.
Elm aphid - - - - -	<u>Myzocallis ulmifolii</u> Moneil
Elm borer - - - - -	<u>Saperda tridentata</u> Oliv.
Elm cockscomb gall - - - - -	<u>Colopha ulmicola</u> Fitch
Elm leaf-beetle a.n.o. - - - - -	<u>Galerucella xanthomelaena</u> Schr. (<u>luteola</u> Muell.)
Elm leaf-miner - - - - -	<u>Kaliopenusa ulmi</u> Sund.

See

Elm sawfly a.n.o. - - - - -	<u>Cimbex americana</u> Leach
Elm scurfy scale - - - - -	<u>Chionaspis americana</u> Johns.
Euonymus scale a.n.o. - - - - -	<u>Chionaspis euonymi</u> Comst.
European corn borer - - - - -	<u>Pyrausta nubilalis</u> Hbn.
European earwig - - - - -	<u>Forficula auricularia</u> L.
European elm scale a.n.o. - - - - -	<u>Gossyparia spuria</u> M'odeer
European hen flea - - - - -	<u>Ceratophyllus gallinae</u> Schrank
European grain aphid - - - - -	<u>Siphocoryne avenae</u> Fab.
European red mite - - - - -	<u>Paratetranychus pilosus</u> C. & F.
European walnut aphid - - - - -	<u>Chromaphis juglandicola</u> Kalt.

F

Fall armyworm a.n.o. - - - - -	<u>Laphygma frugiperda</u> S. & A.
Fall cankerworm a.n.o. - - - - -	<u>Alsophila pometaria</u> Harr.
Fall webworm a.n.o. - - - - -	<u>Hyphantria cunea</u> Drury
False apple red bug - - - - -	<u>Lygidea rendax</u> Reut.
False chinch bug a.n.o. - - - - -	<u>Nysius ericace</u> Schill.
Fiickle midge - - - - -	<u>Sciara inconstans</u> Fab.
Fire ant a.n.o. - - - - -	<u>Solenopsis geminata</u> Fab.
Flea-beetles - - - - -	<u>Halticinae</u>
Fleas - - - - -	<u>Siphonaptera</u>
Florida red scale a.n.o. - - - - -	<u>Chrysomphalus aonidum</u> L.
Foreign grain beetle - - - - -	<u>Cathartus advena</u> Waltl
Forest tent caterpillar - - - - -	<u>Malacosoma disstria</u> Hbn.
Four-horned sphinx - - - - -	<u>Ceratoria amyntor</u> Hbn.
Four-lined plant-bug a.n.o. - - - - -	<u>Poecilocapsus lineatus</u> Fab.
Fowl tick - - - - -	<u>Argas miniatus</u> Koch
Fruit-tree leaf-roller a.n.o. - - - - -	<u>Cacoecia argyrospila</u> Walk.
Fruit-tree leaf syneta - - - - -	<u>Syneta albida</u> Lec.
Fuller's rose beetle - - - - -	<u>Pantomorus fulleri</u> Horn

G

Garden flea-hopper - - - - -	<u>Halticus citri</u> Ashm.
Garden slug - - - - -	<u>Agriolimax agrestis</u> L.
Garden webworm a.n.o. - - - - -	<u>Loxostege similalis</u> Guen.
German cockroach - - - - -	<u>Blattella germanica</u> L.
Gipsy moth - - - - -	<u>Porthetria dispar</u> L.
Gloomy scale - - - - -	<u>Chrysomphalus tenebricosus</u> Comst.
Glover's scale a.n.o. - - - - -	<u>Lecidosaphes gloverii</u> Pack.
Gooseberry bud midge - - - - -	<u>Rhopalosiphia grossulariae</u> Felt
Gooseberry fruit-worm - - - - -	<u>Zophodia grossulariae</u> Riley
Gouty vein gall - - - - -	<u>Dasyneura communis</u> Felt
Granary weevil a.n.o. - - - - -	<u>Calandra granaria</u> L.
Grape flea-beetle a.n.o. - - - - -	<u>Haltica chalybea</u> Ill.
Grape leafhopper - - - - -	<u>Erythroneura comae</u> Say
Grape leaf-roller - - - - -	<u>Desmia funeralis</u> Hbn.
Grape mealybug - - - - -	<u>Pseudococcus maritimus</u> Ehrh.
Grape phylloxera - - - - -	<u>Phylloxera vitifoliae</u> Fitch

See

Grape plume moth a.n.o. - - - - -	<u>Oxyotilus periscelidactylus</u> Fitch
Grape root-worm a.n.o. - - - - -	<u>Fidia viticida</u> Walsh
Grapevine aphid - - - - -	<u>Macrosiphum illinoisensis</u> Shim.
Greater wheat stem maggot - - - - -	<u>Meromyza americana</u> Fitch
Great-Plains false wireworm - - - - -	<u>Eleodes opaca</u> Say
Greedy scale - - - - -	<u>Aspidiotus camelliae</u> Sign.
Green apple aphid - - - - -	<u>Aphis pomi</u> DeG.
Green bud moth - - - - -	<u>Argyroplote variegana</u> Hbn.
Green bug - - - - -	<u>Toxoptera graminum</u> Rond.
Green clover worm - - - - -	<u>Plathynena scabra</u> Fab.
Green June beetle - - - - -	<u>Cotinis nitida</u> L.
Green peach aphid a.n.o. - - - - -	<u>Myzus persicae</u> Sulz.
Greenhouse whitefly a.n.o. - - - - -	<u>Trialeurodes vaporariorum</u> Westw.

H

Hackberry bud-gall - - - - -	<u>Pachysylla celtidis-gemma</u> Riley
Harlequin cabbage bug a.n.o. - - - - -	<u>Murgantia histrionica</u> Hahn
Hemispherical scale a.n.o. - - - - -	<u>Saissetia hemisphaerica</u> Targ.
Hemlock webworm - - - - -	<u>Celexia abietisella</u> Pack.
Hessian fly a.n.o. - - - - -	<u>Phytophaga destructor</u> Say
Hickory aphid - - - - -	<u>Longistigma carvae</u> Harris
Hickory shoot curculio - - - - -	<u>Conotrachelus aratus</u> Germar
Horn fly - - - - -	<u>Haematobia irritans</u> L.
Horse bot-fly - - - - -	<u>Gastrophilus intestinalis</u> DeG.
House fly a.n.o. - - - - -	<u>Musca domestica</u> L.
Human flea - - - - -	<u>Pulex irritans</u> L.

I

Imbricated snout beetle a.n.o. - - - - -	<u>Epicaerus imbricatus</u> Say
Imported cabbage worm a.n.o. - - - - -	<u>Pontia rapae</u> L.
Imported currant borer - - - - -	<u>Synanthedon tipuliformis</u> L.
Imported currant worm a.n.o. - - - - -	<u>Pteronidea ribesi</u> Scop.
Indian-meal moth a.n.o. - - - - -	<u>Plodia interpunctella</u> Hbn.
Interrupted cottonwood leaf-beetle - - - - -	<u>Lina lapronica</u> L.
Iris root borer a.n.o. - - - - -	<u>Macronoctua onusta</u> Grote
Ivy scale - - - - -	<u>Aspidiotus hederæ</u> Vallot

J

Japanese beetle - - - - -	<u>Popillia japonica</u> Newm.
Juniper scale - - - - -	<u>Diaspis carueli</u> Targ.

Kafir ant - - - - - Solenopsis molesta Say

L

Larch case-bearer a.n.o. - - - - -	<u>Coleophora laricella</u> Hon.
Larch sawfly a.n.o. - - - - -	<u>Peratus ericksonii</u> Hartig
Larder beetle a.n.o. - - - - -	<u>Demestes lardarius</u> L.
Large hen louse - - - - -	<u>Menopon biseriatum</u> Piag.
Larger corn stalk-borer - - - - -	<u>Diatraea saccharalis</u> Fab. var. <u>crumbidoides</u> Grote
Latania scale - - - - -	<u>Aspidiotus lataniae</u> Sign.
Late strawberry slug - - - - -	<u>Epuria maculata</u> Norton
Lesser corn leaf-weevil - - - - -	<u>Phytonomus nigrirostris</u> Fab.
Lesser corn stalk-corer a.n.o. - - - - -	<u>Elasmopalpus lignosellus</u> Zell.
Lesser peach-tree borer - - - - -	<u>Aegeria pictipes</u> G. & R.
Lima bean vine-borer - - - - -	<u>Monontilota pergratialis</u> Hulst
Little black ant - - - - -	<u>Monomorium minimum</u> Buck.
Little hickory aphid - - - - -	<u>Monellia carcella</u> Fitch
Locust borer a.n.o. - - - - -	<u>Cyllene robiniae</u> Forst.
Locust leaf-miner - - - - -	<u>Chaleus dorsalis</u> Thunb.
Lodgepole pine needle-miner - - - - -	<u>Recurvaria willeri</u> Busck
Lone star tick - - - - -	<u>Amblyomma americanum</u> L.

M

Magnificent cossid - - - - -	<u>Cossula magnifica</u> Stkr.
Maple borer - - - - -	<u>Synanthedon acerni</u> Clem.
Maple moth - - - - -	<u>Synanthedon terneri</u> Edw.
Mealy flata - - - - -	<u>Oruenis pruikosa</u> Say
Melon aphid a.n.c. - - - - -	<u>Aphis gossypii</u> Glov.
Mexican bean beetle a.n.c. - - - - -	<u>Eurilacina corrupta</u> Wuls.
Horron cricket - - - - -	<u>Anacrus simplex</u> Hald.

N

New York weevil - - - - -	<u>Ithycerus noveboracensis</u> Forst.
Northern tobacco hornworm - - - - -	<u>Protoparce quinquemaculata</u> Haw.
Nun moth - - - - -	<u>Exaltia monacha</u> L.

Oak lecanium	- - - - -	Lecanium quercifex Fitch
Oak spangles	- - - - -	Coccifera poculum O. S.

See

Onion maggot - - - - -	<u>Hylemyia antiqua</u> Meig.
Onion thrips a.n.o. - - - - -	<u>Thrips tabaci</u> L.
Orange scale - - - - -	<u>Chrysomphalus aurantii</u> Mask.
Oriental fruit moth - - - - -	<u>Lasneyresia molesta</u> Busck
Oyster-shell scale a.n.o. - - - - -	<u>Lepidosaphes ulmi</u>
Ox warble - - - - -	<u>Hypoderma lineatum</u> DeVill.

P

Painted lady butterfly - - - - -	<u>Vanessa cardui</u> L.
Pale western cutworm - - - - -	<u>Perosagrotis orthogonia</u> Morr.
Pharaoh's ant - - - - -	<u>Monomorium pharaonis</u> L.
Parsnip leaf-miner - - - - -	<u>Acidia fratria</u> Loew
Pea aphid a.n.o. - - - - -	<u>Illinoia nisi</u> Kalt.
Peach borer - - - - -	<u>Aegeria exitiosa</u> Say
Peach twig-moth a.n.o. - - - - -	<u>Anarsia lineatella</u> Zell.
Pear cherry slug - - - - -	<u>Caliroa cerasi</u> L.
Pear-leaf blister mite a.n.o. - - - - -	<u>Eriophyes pyri</u> Pgst.
Pear midge a.n.o. - - - - -	<u>Contarinia pyrivora</u> Riley
Pear psylla - - - - -	<u>Psylla pyricola</u> Foerst.
Pear thrips - - - - -	<u>Taeniothrips inconsequens</u> Uzel
Pecan bud-moth - - - - -	<u>Proteopteryx bolliana</u> Sling.
Pecan cigar case-bearer - - - - -	<u>Haploptilia carvaefoliella</u> Clem.
Pecan leaf case-bearer - - - - -	<u>Acrobasis nebulella</u> Riley
Pecan nut case-bearer - - - - -	<u>Acrobasis hebesella</u> Hulst
Pecan phylloxera - - - - -	<u>Phylloxera devastatrix</u> Perg.
Pecan slug-worm - - - - -	<u>Lasneyresia carvana</u> Fitch
Pecan spittle-bug - - - - -	<u>Clastoptera obtusa</u> Say
Pepper weevil - - - - -	<u>Anthonomus eugenii</u> Cano
Periodical cicada a.n.o. - - - - -	<u>Tibicina septendecim</u> L.
Phylloxera galls - - - - -	<u>Phylloxera carvae-ren</u> Riley
Pickle worm a.n.o. - - - - -	<u>Diaphania nitidalis</u> Stoll
Pigeon-tremex a.n.o. - - - - -	<u>Tremex columba</u> L.
Pine bark louse - - - - -	<u>Chermes pinicorticis</u> Fitch
Pine noctuid - - - - -	<u>Panolis griseovariegata</u> Goeze
Pine scale - - - - -	<u>Chionaspis pinifoliae</u> Fitch
Pine shoot-moth - - - - -	<u>Evetria frustrana bushnelli</u> Busck
Pin-hole borer - - - - -	<u>Monarthrum fasciatum</u> Say
Pink boll worm a.n.o. - - - - -	<u>Pectinophora gossypiella</u> Saund.
Pistol case-bearer - - - - -	<u>Coleophora malivorella</u> Riley
Plum aphid - - - - -	<u>Hysteroneura setariae</u> Thos.
Plum curculio a.n.o. - - - - -	<u>Conotrachelus nenuphar</u> (Hbst.)
Plum pulvinaria - - - - -	<u>Pulvinaria amygdali</u> Ckll.
Poplar borer a.n.o. - - - - -	<u>Saperda calcarata</u> Say
Potato aphid a.n.o. - - - - -	<u>Macrosiphum solanifolii</u> Ashm.
Potato flea-beetle a.n.o. - - - - -	<u>Epitrix cucumeris</u> Harr.
Potato tuber moth - - - - -	<u>Phthorimaea operculella</u> Zell.
Poultry feather mite - - - - -	<u>Liponyssus silviarum</u> C. & F.
Purple scale a.n.o. - - - - -	<u>Lepidosaphes beckii</u> Newm.

RSee

Rascal leaf-crumpler - - - - -	<u>Mineola indiginella</u> Zell.
Raspberry cane-borer a.n.o. - - - - -	<u>Oberia bimaculata</u> Oliv.
Raspberry fruit-worm - - - - -	<u>Byturus unicolor</u> Say
Raspberry maggot - - - - -	<u>Phorbia rubivora</u> Coq.
Rat mite - - - - -	<u>Liponyssus bacoti</u> Hirst
Rearhorse - - - - -	<u>Stenomantis carolina</u> Johan.
Red-footed flea-beetle - - - - -	<u>Crepidodera erythropus</u> Melsh.
Red-humped caterpillar - - - - -	<u>Schizura concinna</u> S. & A.
Red-necked cane borer - - - - -	<u>Agrilus ruficollis</u> Fab.
Rice stalk borer - - - - -	<u>Chilo plejadellus</u> Zinck.
Rocky mountain spotted fever tick - - - - -	<u>Demacentor venustus</u> Banks
Root-knot nematode - - - - -	<u>Heterodera radiculicola</u> Greef-Mueller
Rose aphid - - - - -	<u>Macrosiphum rosae</u> L.
Rose chafer a.n.o. - - - - -	<u>Macroductylus subspinosus</u> Fab.
Rose curculio a.n.o. - - - - -	<u>Rhynchites bicolor</u> Fab.
Rose leaf-beetle - - - - -	<u>Nodonota puncticollis</u> Say
Rose leafhopper - - - - -	<u>Tynhiocvba rosae</u> L.
Rose leaf-tyer - - - - -	<u>Cacoecia rosaceana</u> Harr.
Rose sawfly - - - - -	<u>Caliroa aethiops</u> Fab.
Rose scale a.n.o. - - - - -	<u>Aulacaspis rosae</u> Bouche
Rosy apple aphid - - - - -	<u>Anuraphis roseus</u> Baker
Round-headed apple-tree borer a.n.o. - - - - -	<u>Saperda candida</u> Fab.
Rusty tussock moth a.n.o. - - - - -	<u>Notolophus antiqua</u> L.

S

Saddle-back caterpillar a.n.o. - - - - -	<u>Sibine stimulea</u> Clem.
San Jose scale a.n.o. - - - - -	<u>Aspidiotus perniciosus</u> Comst.
Santo Domingo cane caterpillar - - - - -	<u>Calio to pulchella</u> Lathy
Satin moth - - - - -	<u>Stilpnnotia salicis</u> L.
Say's blister-beetle - - - - -	<u>Pomphobaea savi</u> Lec.
Scavenger beetle - - - - -	<u>Trox suberosus</u> Fab.
Screwworm a.n.o. - - - - -	<u>Chrysomya macellaria</u> Fab.
Scurfy scale a.n.o. - - - - -	<u>Chionaspis furfura</u> Fitch
Seed-corn maggot a.n.c. - - - - -	<u>Hylemyia cilicrura</u> Rond.
Shot-hole borer a.n.o. - - - - -	<u>Scolytus rugulosus</u> Ratz.
Silver-maple leaf-mite - - - - -	<u>Phyllocoptes quadriipes</u> Shim.
Silver-striped webworm - - - - -	<u>Crambus praefectellus</u> Zinck.
Six-spotted leafhopper - - - - -	<u>Cicadula sexnotata</u> Fab.
Smaller sugarcane-borer - - - - -	<u>Chilo loftini</u> Dyar
Small hen body-louse - - - - -	<u>Menopon pallidum</u> Nitzsch
Smut beetle - - - - -	<u>Phalacrus politus</u> Melsh.
Snow-ball aphid - - - - -	<u>Anuraphis viburnicola</u> Gyll.
Snow-white linden moth - - - - -	<u>Ennomos subsignarius</u> Hbn.
Snowy tree-cricket a.n.o. - - - - -	<u>Oecanthus niveus</u> DeG.
Soft scale a.n.o. - - - - -	<u>Coccus hesperidum</u> L.
Sorghum webworm - - - - -	<u>Celana sorghiella</u> Riley
Sour gum case-cutter - - - - -	<u>Antispila ryssaefoliella</u> Clem.
Southern armyworm a.n.o. - - - - -	<u>Prodenia eridania</u> Cram.

See

Southern green stink-bug - - - - -	<u>Nezara viridula</u> L.
Southern pine beetle - - - - -	<u>Dendroctonus frontalis</u> Zimm.
Spinach leaf-miner - - - - -	<u>Pegomya hyoscyami</u> Panz.
Spiraea aphid - - - - -	<u>Aphis spireaella</u> Schout.
Spiraea leaf-tyer - - - - -	<u>Argyroplote hemidesma</u> Zell.
Spring cankerworm a.n.o. - - - - -	<u>Paleacrita vernata</u> Peck.
Spruce bud worm - - - - -	<u>Harmoloba fumiferana</u> Clem.
Spruce gall aphid - - - - -	<u>Chermes abietis</u> L.
Spruce mite - - - - -	<u>Paratetranychus uniunguis</u> Jac.
Squash bug - - - - -	<u>Anasa tristis</u> DeG.
Squash lady-beetle - - - - -	<u>Epilachna borealis</u> Fab.
Squash-vine borer - - - - -	<u>Melittia satyriniformis</u> Hbn.
Stable fly a.n.o. - - - - -	<u>Stomoxys calcitrans</u> L.
Stalk borer a.n.o. - - - - -	<u>Papaipema nitela</u> Guen.
Stick-tight flea - - - - -	<u>Echidnophaga gallinacea</u> Westw.
Strawberry crown-borer a.n.o. - - - - -	<u>Tyloderma fragariae</u> Riley
Strawberry flea-beetle a.n.o. - - - - -	<u>Haltica ignita</u> Ill.
Strawberry leaf-beetle - - - - -	<u>Paria canella</u> Fab.
Strawberry leaf-roller a.n.o. - - - - -	<u>Ancylis comptana</u> Froehl.
Strawberry root louse - - - - -	<u>Aphis forbesi</u> Weed.
Strawberry root weevil - - - - -	<u>Brachyrhinus ovatus</u> L.
Strawberry weevil a.n.o. - - - - -	<u>Anthonomus signatus</u> Say
Straw-itch mite - - - - -	<u>Pediculoides ventricosus</u> Newp.
Striped cucumber beetle a.n.o. - - - - -	<u>Diabrotica vittata</u> Fab.
Striped tree cricket - - - - -	<u>Oecanthus nigricornis</u> Walk.
Sugar-beet armyworm - - - - -	<u>Caradrina exigua</u> Hbn.
Sugar-beet nematode - - - - -	<u>Heterodera schachtii</u> Schmidt
Sugar-beet root-maggot - - - - -	<u>Tetanops aldrichi</u> Hendel
Sugar-beet webworm - - - - -	<u>Loxostege sticticalis</u> L.
Sugarcane beetle - - - - -	<u>Euetheola rugicens</u> Lec.
Sugarcane borer a.n.o. - - - - -	<u>Diatraea saccharalis</u> Fab.
Sugar-maple borer - - - - -	<u>Glycobius speciosus</u> Say
Sunflower weevil - - - - -	<u>Rhodoaenus tredecimpunctatus</u> Ill.
Sweet-potato leaf-beetle - - - - -	<u>Tyophorus viridiclavatus</u> Crotch
Sweet-potato weevil - - - - -	<u>Cylas formicarius</u> Fab.

T

Tarnished plant-bug - - - - -	<u>Lygus pratensis</u> L.
Tea scale - - - - -	<u>Fiorinia theae</u> Green
Tent caterpillar - - - - -	<u>Malacosoma americana</u> Fab.
Terrapin scale - - - - -	<u>Lecanium nigrofasciatum</u> Perg.
Throat bot - - - - -	<u>Gastrophilus nasalis</u> L.
Tip moth - - - - -	<u>Rhyacionia bushnelli</u> Busck
Tobacco bud worm - - - - -	<u>Heliothis virescens</u> Fab.
Tobacco flea-beetle - - - - -	<u>Epitrix parvula</u> Fab.
Tobacco hornworm - - - - -	<u>Protoparce sexta</u> Joh.
Tobacco thrips - - - - -	<u>Frankliniella fusca</u> Hinds
Tomato suckfly - - - - -	<u>Macrolophus separatus</u> Uhler
Tulip scale - - - - -	<u>Toumeyella liriodendri</u> Gmel.
Turnip aphid - - - - -	<u>Rhopalosiphum pseudobrassicae</u> Davis

See

Turnip gall-weevil - - - - - Ceuthorrhynchus pleurostigma Marsh.
Twelve-spotted cucumber beetle - - - - - Diabrotica 12-punctata Fab.
Two-spotted anomala - - - - - Anomala bipunctata Gyll.
Two-striped sweet-potato beetle - - - - - Cassida bivittata Say

V

Variegated cutworm - - - - - Lycophotia margaritosa Haw.

W

Walkingstick a.n.o. - - - - - Diaperomera femorata Say
Walnut caterpillar a.n.o. - - - - - Datana integerrima G. & R.
Walnut scale a.n.o. - - - - - Aspidiotus juglans-regiae Comst.
Western corn root worm - - - - - Diabrotica longicornis Say
Western pine beetle - - - - - Dendroctonus brevicornis Lec.
Western 12-spotted cucumber beetle - - - - - Diabrotica soror Lec.
West Indian peach scale - - - - - Aulacaspis pentagona Targ.
Wheat joint worm - - - - - Harmolita tritici Fitch
Wheat sawfly borer - - - - - Ceruus pygmaeus L.
Wheat strawworm a.n.o. - - - - - Harmolita grandis Riley
Wheel bug - - - - - Arius cristatus L.
White-marked tussock moth a.n.o. - - - - - Hemerocampa leucostigma S. & A.
White pine weevil a.n.o. - - - - - Pissodes strobi Peck
Willow apple gall - - - - - Pontania pomum Walsh
Willow leaf-beetle - - - - - Lina lapponica L.
Wingless May-beetle - - - - - Phyllophaga cribrata Lec.
Winter tick - - - - - Dermacentor albipictus Pack.
Wireworms - - - - - Elateridae
Woolly apple aphid - - - - - Eriosoma lanigerum Hausm.
Woolly elm aphid - - - - - Eriosoma americanum Riley
Woolly maple leaf-scale - - - - - Phenacoccus acericola King

Y

Yellow-fever mosquito - - - - - Aedes aegypti L.
Yellow-headed fireworm a.n.o. - - - - - Peronea muricata Rob.
Yellow-necked caterpillar - - - - - Datana ministra Drury

Z

Zebra caterpillar a.n.o. - - - - - Mamestra picta Harris
Zig-zag pear borer - - - - - Agrilus sinuatus Oliv.





